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TUESDAY, MARCH 13, 1979

PART II

DEPARTMENT OF THE INTERIOR

Office of Surface Mining Reclamation and Enforcement

■

SURFACE COAL MINING AND RECLAMATION OPERATIONS

Permanent Regulatory Program

[4310-05-M]

Title 30—Mineral Resources

CHAPTER VII—OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT, DEPARTMENT OF THE INTERIOR

SURFACE COAL MINING AND RECLAMATION OPERATIONS

Permanent Regulatory Program

AGENCY: Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior.

ACTION: Final rule.

SUMMARY: The Office of Surface Mining Reclamation and Enforcement of the U.S. Department of the Interior ("OSM" or "the Office") adopts final regulations in this Chapter to implement a nationwide permanent program for the regulation of coal exploration and surface coal mining and reclamation operations and the surface effects of underground coal mining by the States and the Federal Government, as required by Title V of the Surface Mining Control and Reclamation Act of 1977 ("SMCRA" or "the Act").

EFFECTIVE DATE: April 12, 1977, except as stated below in Paragraph 8 under discussion of "Approval of Other Agencies."

ADDRESSES: (1) Director, Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior, South Building, 1951 Constitution Avenue, N.W., Washington, D.C. 20240; (2) Administrative Record Office, Room 120, South Building, 1951 Constitution Avenue, N.W., Washington, D.C. 20240; telephone number 202-343-4728.

FOR FURTHER INFORMATION CONTACT:

Mr. Richard M. Hall, Assistant Director, Inspection and Enforcement (Subchapters A and L); Mr. Carl Close, Assistant Director, State and Federal Programs (Subchapters C, D, and F); Dr. David R. Maneval, Assistant Director, Technical Services and Research (Subchapters G, J, K, and M), Office of Surface Mining, U.S. Department of the Interior, South Building, 1951 Constitution Avenue, N.W., Washington, D.C. 20240. Telephone numbers: Hall, 202-343-4217, Close, 202-343-4225, and Maneval, 202-343-4264.

SUPPLEMENTARY INFORMATION: This document contains the final rules promulgated by the Office which implement the permanent regulatory program under SMCRA. Also included are the rationale, supporting technical references, and discussion of the alternatives used or considered by the Office in the formulation of final rules.

The final rules are issued to fulfill the Act's Congressional directive that the Secretary promulgate regulations implementing a permanent regulatory program for surface coal mining and reclamation operations. The permanent regulatory program is the second stage of the phased implementation of the Act as intended by Congress. Major categories included in the final rules are regulations specifying performance standards and design criteria, procedures and requirements for the submission of State programs, procedures governing the implementation of a Federal program for States without an approved State program, and procedures and the requirements for the regulation of surface coal mining and reclamation operations on Federal lands. In addition, these final rules contain provisions regarding applications for and issuance of coal exploration approvals and surface and underground coal mining and reclamation operations permits, blasting procedures, standards for performance bonds, and provisions for inspection, enforcement, and assessment of civil penalties.

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SUBCHAPTER S—MINING AND MINERAL RESTITUTES (PART 890)

BACKGROUND

Throughout the implementation of the initial program (42 FR 62639-62716, December 13, 1977) and the promulgation of final rules to implement a permanent regulatory program, the Office has been guided by the intent of Congress that the States assume the lead in achieving the purposes of the Act. Section 503(a) of the Act requires States to submit permanent program applications by February 3, 1979. However, under Section 504(a), the Secretary may extend the date for State permanent program applications up to an additional 6 months, if submission of the application requires an act of the State legislature. This extension has been granted to all States where coal is currently mined. Thus, States have until August 3, 1979, to submit programs to the Secretary for approval. In addition, under Section 503 of the Act, a total of 10 months (6 months for initial review and 4 months for resubmission and reconsideration) may elapse before final Secretarial approval or denial of a State program. Thus, by June 3, 1980, a State program must be approved, or a Federal program implemented, in each State.

Under the permanent regulatory program all requirements of the Act are implemented and apply to all surface coal mining and reclamation operations in the Nation except those exempted by the Act. The full complement of permit and bond requirements and performance standards will apply to surface coal mining and reclamation operations upon issuance of a permit under a State or Federal program. The Act provides that 2 months after approval of a State program or implementation of a Federal program, each operator who wishes to continue to mine must apply for a new permit. Six months thereafter the regulatory authority is required to act on the application. However, an operator who has timely applied for a permit under the permanent program can operate under his or her initial program permit beyond the deadline until the State acts on his or her application, if the requirements of 30 CFR 771.13 are met. This means that for non-Federal and non-Indian lands, the coal mining and reclamation operations must have new permits and bonds and be in compliance with the full range of performance standards no later than February 3, 1981. If State programs are approved before June 3, 1980, or a Federal program is implemented before that date, the application of the full requirements of the Act to surface coal mining and reclamation operations will occur earlier than February 3, 1981.

On Federal lands, performance standards will apply to existing operations 6 months after the effective date of the regulations, or approximately mid-September 1979. If mine plan revisions are required, compliance with those performance standards which make the mine plan revisions necessary and such revisions must occur within 1 year following the effective date of the regulations. Permanent program permits for existing mines on Federal lands are required 8 months after approval of a State program or implementation of a Federal program for the State in which the Federal lands are located. Following the effective date of regulations, new mines on Federal lands must obtain a permit under the permanent regulatory program.

Surface coal mining operations on Indian lands are not regulated under the permanent regulatory program. Regulations which currently apply to surface coal mining operations on Indian lands were published on December 16, 1977 (42 FR 63394-63410), and are found at 25 CFR Part 177.

PUBLIC PARTICIPATION

Throughout the development of these final rules, the Office has solicited and given substantial consideration to the comments and recommendations received from the public. Following the release of the preproposed draft of final rules on July 3, 1978, and July 21, 1978, the Office held informal public hearings and was available for meetings with the public. The Office's administrative record was opened to receive written comments through August 18, 1978. Changes occurring between the texts of the preproposed and proposed permanent rules published on September 18, 1978, resulting from comments received during that period, were discussed in the preamble to the proposed rules (see 43 FR 41662-41663, September 18, 1978).

The final public comment period on the proposed rules began on the date of promulgation, September 18, 1978, and was originally scheduled to close at 5 p.m., November 17, 1978 (43 FR 41662, September 18, 1978). However, because the Office later determined that several pieces of technical literature referred to in the proposed rules were unavailable for inspection as of the 30th day prior to the close of the comment period, the closing date was then extended to 5 p.m., November 27, 1978. The Office also held one additional public hearing in Washington, D.C., on November 22, 1978, on the proposed rules (43 FR 50407, October 27, 1978).

PUBLIC HEARINGS

During the comment period on the proposed rules, 25 days of public hearings were held to receive oral and written comments on the regulations and regulatory analysis (see discussion of regulatory analysis, *infra*). Transcripts of testimony were placed in the administrative record and processed in the same manner as all other written comments. Public hearings were held in Washington, D.C.; Charleston, West Virginia; Knoxville, Tennessee; Kansas City, Missouri; Indianapolis, Indiana; and Denver, Colorado.

PUBLIC MEETINGS

In response to specific requests, the Office and the Assistant Secretary for Energy and Minerals held a total of 57 public meetings on the substance of the proposed rules with State agencies or organizations, industry representatives, environmental groups, and other Federal agencies between September 18 and November 27, 1978. To the maximum extent possible, advance public notice was posted in the Administrative Record Office (Room 120), Office of Surface Mining, indicating the date, time, place, topic, and parties involved. A summary of each meeting was filed by a departmental or Office participant, incorporated in the administrative record, and processed as a written comment. A list of such meetings and the summary of each are available in the Administrative Record Office.

ANALYSIS OF PUBLIC COMMENTS

The Office received 589 written comments on the proposed regulations from individuals, organizations, and government agencies. Beginning in early November 1978, the Office organized 22 task groups comprised of more than 100 technical experts from the Office and more than 20 other agencies. The groups were assigned specific topics, parts, and sections of the proposed rules and were responsible for analyzing comments and developing recommendations in their area of expertise. Control mechanisms were used to track the referral of comments to the various groups and to insure that all comments were considered. In addition to the comments received on the proposed rules, comments on the preproposed drafts which were received after the August 18, 1978, deadline and were not previously considered, were included in this process. Also included were two comments (from the Arizona Public Service Commission and the Council on Environmental Quality) received within 2 hours after the close of the official comment period at 5 p.m., November 27, 1978. The Office determined that the commenters made a good faith effort to hand-deliver their comments by 5 p.m.

During the official comment period, the Office received comments on the proposed rules from the Council of Economic Advisors (CEA) as incorporated in the Council of Wage and Price Stability report submitted on behalf of the Regulatory Analysis Review Group (RARG). The Secretary, pursuant to Executive Order 12044 and after consultation with the Executive Office of the President and the U.S. Department of Justice, Office of Legal Council, decided to consult with CEA prior to promulgation of final regulations. On January 4, 1979, the Office made a catalog of all oral and written contacts between CEA and parties outside the Executive Office of the President available for public review (44 FR 1355, January 4, 1979). Copies of the catalog were made available in the Administrative Record Office at the Central Office and all five Regional Offices. The administrative record was reopened to accept public comments addressing the substance of the information contained in the catalog and the relationship of the catalog to the proposed regulations and RARG's comments received on November 27, 1978. This announcement also stated that all written comments must be received by 5 p.m., January 22, 1979, in order to be considered or included in the administrative record.

Comments received were given the following consideration. Each comment was forwarded to the appropriate Assistant Director(s) having expertise on, or primary administrative responsibility for, the relevant subject. Control mechanisms were used to insure that all timely comments were considered. Comments received after the deadline were not considered or included in the administrative record.

The preamble to the final rules contains the bases and purposes, alternatives considered, and decisions made by the Office in responding to significant comments. The Office considered significant comments to be those urging the adoption of viable alternatives or questioning the provisions in the proposed regulations, which provided reasonable rationale, justification, technical references, or other materials supporting the recommendations or comments. Insignificant comments, that is, those of a more general nature or those which proposed changes found to be inconsistent with the requirements of the Act, are included in the administrative record but are not discussed in the preamble.

APPROVAL OF OTHER AGENCIES

The Act and other Federal statutes, regulations, and Executive Orders require the Secretary, prior to promulgation of the final rules, to obtain written concurrence or comments from certain Federal agencies. These agencies include the U.S. Environmental Protection Agency; the U.S. Department of Agriculture; the U.S. Army Corps of Engineers; the U.S. Department of Labor; the Director, FEDERAL REGISTER; the U.S. Fish and Wildlife Service; and the Advisory Council on Historic Preservation. All concurrences necessary have been obtained and are on file in the administrative record. In addition, under Section 201(e) of the Act and 44 U.S.C. 3502 and 3512, the Office must obtain the approval of the U.S. Government Accounting Office (GAO) for public recordkeeping and reporting requirements established by the regulations.

The requirements for concurrence or comment on the final rules by the foregoing agencies are as follows:

1. Sections 501(a)(B) and (b) of the Act require the written concurrence of the Administrator of the Environmental Protection Agency for regulations relating to air or water quality standards promulgated under the Clean Water Act and the Clean Air Act. By letter dated February 14, 1979, the Administrator of the Environmental Pro-

tection Agency concurred with the Office's regulations.

2. Section 510(d)(1) of the Act states that, under regulations issued by the Secretary with the concurrence of the Secretary of Agriculture, the regulatory authority shall follow certain procedures in granting permits for surface coal mining operations on prime farmland. The regulations concerning issuance of permits on prime farmland have been developed in consultation with the Secretary of Agriculture in accordance with Section 510(d)(1). By letter dated March 1, 1979, the Secretary of Agriculture concurred with the prime farmland provisions of the regulations.

3. Section 515(f) of the Act requires that regulations pertaining to coal mine waste piles and dams be promulgated with the written concurrence of the Chief of Engineers, U.S. Army Corps of Engineers. By letter dated February 15, 1979, the Chief of Engineers concurred with the regulations.

4. Section 516(a) of the Act states that the Secretary shall promulgate rules and regulations directed toward the surface effects of underground coal mining operations and requires that such rules and regulations shall not conflict with or supersede any provision of the Federal Coal Mine Health and Safety Act of 1969 or any regulation issued pursuant thereto. The written concurrence of the head of the department which administers the Act is required before final rules may be promulgated. By letter dated February 21, 1979, the Secretary of Labor concurred with these regulations.

5. Under 5 USC 522(a) the Office is required to consult with and receive the approval of the Director of the FEDERAL REGISTER for the incorporation by reference of materials into the text of the final rules. The Office filed a written request for approval of the Director of the FEDERAL REGISTER for incorporating by reference materials in the following Sections: 700.5, 785.17(b)(1), 785.19(e)(3)(i), 816.49(a)(5), 816.65(f)(2), 816.65(g), 816.97(c), 817.49(a)(5), 817.97(c). By letter dated February 7, 1979, the Director of the FEDERAL REGISTER has approved the Office's request.

6. The Office initiated consultation with the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act of 1973, 16 U.S.C. 1531 *et seq.*, by memorandum of September 21, 1978. By letter of January 26, 1979, the Director, U.S. Fish and Wildlife Service, filed a Biological Opinion with the Office stating that the final regulations will not jeopardize the continued existence of endangered species and threatened species or result in the destruction or modification of habitat of such species.

7. The Office initiated consultation with the Advisory Council on Historic Preservation, under Section 106 of the National Historic Preservation Act and Executive Order 11593, by memorandum of September 21, 1978. A public meeting between representatives of the Advisory Council and the Office was held on November 2, 1978. The Office received written comments from the Advisory Council on November 27, 1978.

8. Under Section 201(e) of the Act (30 U.S.C. 1211(e)), OSM is considered an independent Federal regulatory agency for the purposes of 44 U.S.C. 3502 and 3512. As a result, all of the permanent regulations which impose recordkeeping and reporting requirements on members of the public have been submitted to the General Accounting Office (GAO) for clearance pursuant to its regulations (4 CFR Part 10).

Some Sections of the permanent regulations require the collection, submission, or retention of certain categories of information by the States, operators, or the general public. Other Sections sponsor, through the States, such collection, submission, or retention of information. The purpose of GAO review is to assure that the required information is obtained with a minimum of burden on the public and that unnecessary duplication of effort in providing the information is eliminated.

OSM has identified the following Sections of the final regulations that impose recordkeeping and reporting requirements. The Sections listed below are adopted subject only to clearance by GAO, pursuant to 44 U.S.C. 3512. These particular Sections of the regulations will not be effective until OSM publishes a notice of clearance by GAO.

SUBCHAPTER A

Sections 700.12(b), 700.13, 707.12.

SUBCHAPTER C

Sections 730.12(b), 731.12(a), 731.13, 731.14, 732.11(d), 732.13(f), 732.14, 732.16(a) and (b), 732.17(b), (f), and (g), 733.12(a)(2).

SUBCHAPTER D

Sections 741.11(a)(1), 741.11(c)(1), 741.12(c), 741.13(c), 741.15(a)(1), 741.15(b)(1), 741.21(b), 741.23(c), 741.24(b), 742.11(a), 742.13(a), 742.18(c), 742.18(d), 743.11(b), 745.11(a) and (b), 745.15(a), 745.16.

SUBCHAPTER F

Sections 761.12(b)(2), (d), (e) and (f), 764.11, 764.13(b) and (c), 764.15(a)(1), (2), (4), (5) and (6), 764.15(b)(1) and (2), 764.15(c) and (d), 764.17(a), (b), (c) and (e), 764.19(b), 764.21, 764.25(b), 769.11, 769.13.

SUBCHAPTER G

Sections 771.15(c), 771.21(a)(1), 771.21(b)(2) and (3), 771.23, 776.11 and 12, 776.14, 778.13–21, 779.11–27, 780.11–37, 782.13–21, 783.11–27, 784.11–25, 785.13(e), (f), (g), and (h), 785.14–22, 786.11(a), (b), (c), and (d), 786.12–23(d), 788.11–19.

SUBCHAPTER J

Sections 800.11, 800.12, 805.14(a) and (b), 806.11(b), 806.14, 807.11(a), 807.11(c), 807.11(e), 807.11(f), 807.11(g), 808.12.

SUBCHAPTER K

Sections 816.46(c)(4), 816.46(r), 816.46(t), 816.49(h), 816.52(a)(3), 816.52(b)(1)(iii), 816.53(a), 816.64, 816.65(a)(2)(iii), 816.67, 816.68, 816.71(j), 816.82(a)(4) and (b), 816.87, 816.91(b), 816.117(b)(4), 816.117(c)(1) and (c)(3), 816.131(b), 816.133(c)(1)–(4) and (c)(8)–(9), 816.150(d)(1), 816.152(d)(13), 816.160(d)(1), 816.163(d), 817.46(c)(4), 817.46(r), 817.46(t), 817.49(h), 817.52(a)(3), 817.52(b)(1)(iii), 817.53(a), 817.62, 817.65(b)(2)(iii), 817.67, 817.68, 817.71(j), 817.82(a)(4) and (5), 817.87, 817.91(b), 817.117(b)(4), 817.117(c)(1)(c)(3), 817.131(b), 817.133(c)(1)–(4) (c)(8) and (9), 817.150(d)(1), 817.152(d)(13), 817.160(d)(1), 817.163(d), 822.14(a) and (d), 826.12(b).

SUBCHAPTER L

Sections 840.11(a), (c), and (d)(3), 840.14(a) and (b), 842.12(a), 842.14, 842.15(a) and (b), 843.11(a)(2), (b)(2)(c) and (f), 843.12(a)(2), (b) and (e), 843.13(c), (d) and (e), 843.14(a)–(d), 843.15(d) and (f), 843.16, 845.17(a) and (b), 845.18(c) and (d), 845.19(a).

ENVIRONMENTAL IMPACT STATEMENT

A draft Environmental Impact Statement (EIS) was prepared pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969 and Section 702(d) of the Act. The draft EIS was filed with the Environmental Protection Agency (EPA) and made available to the public on October 4, 1978. Comments were received until November 27, 1978. Public hearings were held on the draft EIS in Washington, D.C., on October 31, 1978; in Indianapolis, Indiana, on November 1, 1978; and in Denver, Colorado, on November 2, 1978. The final EIS was filed with EPA and made available to the public on January 29, 1979. Comments received on the EIS which related to the substance of a rule were processed by the task groups, as were comments on the regulations, in order to integrate environ-

mental issues raised by EIS comments with environmental factors considered in the development of the regulations. All comments on the draft EIS were responded to in the final EIS.

The final EIS analyzes the preferred alternative regulations at Appendix C and programmatic alternatives to the preferred alternative in Part A, VI and Part B, IV. The environmental analyses of the preferred alternative and alternatives to it contained in the final EIS are integrated into this preamble and were before OSM, other Departmental officials, and the Secretary, and were considered by them, prior to adoption of the final regulations. The programmatic alternatives in the final EIS were considered in addition to the individual alternatives to specific regulatory provisions discussed in this preamble.

In addition, public comments submitted on the final EIS were reviewed and summarized for the Secretary prior to his decision to promulgate these final rules. Copies of these comments are available in the administrative record room. OSM determined that none of these comments required revision of or a supplement to the final EIS.

Regulatory Analysis

A draft Regulatory Analysis (RA), prepared on the proposed permanent regulatory program in accordance with the requirements of Executive Order 12044, was made available to the public on September 21, 1978. Public comments were accepted through November 27, 1978. The final RA is being made available on the date of promulgation of these rules. Although Executive Order 12044 and OMB Circular A-116, issued on August 18, 1978, allow for an urban and community impact analysis for all new regulatory programs for which an RA is prepared, the Office found it impracticable to conduct such an analysis, because the promulgation of the permanent program would have been delayed well beyond the statutory deadline. OMB concurred in the decision not to complete such an analysis in a letter dated December 18, 1978. Documentation of the decision and OMB concurrence is available in the administrative record.

The final RA contains an economic analysis of selected alternatives to individual regulatory requirements, which alternatives were selected as described in Chapter II of the RA. The analysis of these alternatives is integrated into this preamble and was before OSM, other Departmental officials, and the Secretary, and was considered by them prior to adoption of the final regulations. The specific economic analyses of alternatives to individual regulations in the RA were considered in addition to the individual alternatives to specific regulatory provisions discussed in this preamble.

SUBCHAPTER A—GENERAL

PART 700—General

Part 700 introduces the regulations of Chapter VII of Title 30 of the Code of Federal Regulations. The regulations in Chapter VII implement the Secretary of the Interior's responsibility under the Surface Mining Control and Reclamation Act of 1977 (Pub. L. 95-87, 91 Stat. 445, 30 U.S.C. 1201-1328). The Secretary's general rulemaking authority for regulations in Chapter VII is found in Section 201(c)(2) of the Act. In addition, the following Sections of the Act contain rulemaking authority for the regulations in Chapter VII: Sections 304, 405, 407, 412, 501, 510, 512, 515, 516, 517, 520, 523, 527, 528, 529, 708, and 719.

§ 700.1 Scope.

This Section provides a brief summary of the 13 Subchapters which compose Chapter VII of Title 30 of the Code of Federal Regulations. It serves as a guide to the reader interested in obtaining a summary of the regulations and contains no substantive provisions.

§ 700.2 Objectives.

This Section sets forth a simple statement of the objectives of the regulations. The regulations are intended to fulfill the purposes of Section 102 of the Act. The regulations implementing those purposes are based upon the substantive provisions of the Act, the legislative history, other applicable laws—particularly those cited in Section 702 of the Act, the Endangered Species Act of 1973, as amended, the Fish and Wildlife Coordination Act, the National Historic Preservation Act and related regulations and Executive Orders and judicial interpretations.

§ 700.3 Authority.

The statutory authority for this Section is found (1) for the Secretary of Agriculture in Sections 406, 507, 510 and 515; (2) for the Secretary of Labor in Sections 516 and 702; (3) for the Environmental Protection Agency in Sections 501, 503 and 702; (4) for the Corps of Engineers in Sections 515(f) and 702; (5) for the Council of Environmental Quality in Sections 702 and 709; and (6) for the Department of Energy in Title VIII and IX.

This Section sets forth the Secretary's authority under the Act to implement its programs, except where programs and responsibilities are specifically assigned to other agencies by the Act or where authority is retained by the States.

§ 700.4 Responsibilities.

Authority for this Section is found in the Act at Sections 102, 201, 405, 502, 503, 504, 512, 514, 518, 519, 521, 522, 523, 525, and 601.

Subsections 700.4 (a) and (b) identify the Secretary's authorities and responsibilities derived from the Act which have been delegated to the Director. See, 216 Departmental Manual Chapters 1 and 2 (November 9, 1977). The delegation is to the Director through the Assistant Secretary, Energy and Minerals, of the Department of Interior, who is ultimately responsible to the Secretary for implementation of the programs in Chapter VII. Notwithstanding language in the delegation, Section 700.4(a)(1) and other provisions in Subchapter C reserve to the Secretary the right to withdraw approval of a State program and substitute a Federal program. This is a change from the proposed regulations based upon the recognition that inherent in the authority to approve a State program is the authority to withdraw approval and both these functions should remain with the Secretary.

Subsection 700.4(c) identifies the States' responsibility for regulation of coal exploration and surface coal mining and reclamation operations under the initial program and under an approved State program. The regulations which implement the Title V regulatory program in the Act are intended to provide the minimum requirements for State programs which will create the uniform minimum level of protection and enforcement throughout the country contemplated by the Act. The State responsibility under an approved State Reclamation Plan is also noted.

Consistent with the principle that the States should take the lead in regulating surface coal mining and reclamation operations within their borders, with respect to regulation on Federal lands, Subsection (d) recognizes that the Secretary may delegate certain responsibilities and authority to the States pursuant to Section 523(c) of the Act.

Subsection 700.4(e) has been added to reflect the responsibilities of the Director, Office of Hearings and Appeals, Department of the Interior, for administrative appeals of decisions by the Office under the Act. Procedural regulations governing those appeals are found at 43 CFR Part 4, 43 FR 34376, August 3, 1978.

1. OSM has adopted the comment suggesting the deletion of "initial" in reference to the approval or disapproval of a State program in Subsection 700.4(a)(1). "Initial" was intended to signify that the Director, rather than the Secretary, has the responsibility for certain subsequent actions such as substitution of Federal en-

forcement of a State program which is not being properly enforced as provided in 30 CFR Part 733. Instead, Subsection 700.4(a)(1) has been restated to clarify the relationship between the responsibilities exercised by the Secretary and the Director. The Secretary exercises the responsibility under Section 504 of the Act to approve or withdraw a State program. The Director exercises the responsibility to substitute Federal enforcement for a State program under Section 521(b) of the Act.

2. Commenters suggested that the regulation in Subsection 700.4(b) should list the Federal agencies with responsibility over natural resources and Federal land managing agencies with whom the Director must consult. This Section recognizes that the Director has a responsibility to confer with Federal land managing agencies and Federal agencies with jurisdiction over natural resources on Federal lands prior to taking actions which could affect their responsibilities. The Office believes listing specific agencies is inappropriate, because the agencies with expertise to be consulted will vary depending on the circumstances of the contemplated action.

3. A number of comments were received on various sections of the regulations concerning the Director's responsibility to comply with the Historic Preservation Act, 16 U.S.C. Section 470, *et seq.*, and other statutes and Executive Orders concerning preservation of historic and cultural resources. These comments have been responded to in the preamble for specific sections which were the subject of the comments. In light of the nature of these comments, "historic" has been added to 700.4(b) to reflect the Director's responsibility to consult with Federal agencies having responsibility for historic resources as well as natural resources on Federal lands.

4. Commenters also suggested that Subsection 700.4(b) be revised to require the Director to comply with the recommendations of the other agencies, or in the alternative, that the Director be obligated to notify the recommending agency of noncompliance, and to allow the agency a reasonable time in which to attempt to protect the threatened resources, by seeking a delay in the granting of a permit, or by conditions imposed in the permit. Such a requirement would, in effect, delegate the Director's decision-making responsibilities under the Act to other agencies. There is no basis for such a requirement in the Act. The Office does intend to notify other agencies of its decision where appropriate and believes the regulations provide appropriate mechanisms to resolve any differences. The Office has not adopted the recommendation and believes the purposes of the Act will be best served by making no change in the regulation.

5. Another commenter recommended the deletion of "certain" in reference to the authority delegated to States under cooperative agreements in Subsection 700.4(d). The commenter argued that "certain" is unnecessary to describe the Federal-State relationship under the cooperative agreement. This Section does not attempt to set forth the responsibilities or authorities to be delegated. Part 745 controls the content of cooperative agreements. The word "certain" is in the regulation for informational purposes only. It serves to alert the reader to the fact that not all Federal responsibilities are assigned to the States under the cooperative agreements. For this reason the Office has decided to retain the present language in the provision.

§ 700.5 Definitions.

Statutory authority for the definitions is found in Sections 102, 201, 701, 702, 710 and Title IV and Title V of the Act.

Section 700.5 defines terms which are generally applicable throughout the Act and regulations. OSM has included many definitions from the Act here and in Part 701 to make the regulations as complete as possible so that persons using them will not have to turn constantly to the Act to find definitions of often used terms. Definitions repeating statutory definitions include "Federal lands program," "Fund," "Indian land," "Indian tribe," "Office," and "mining operations."

Federal lands. An effort has been made to make the Federal lands definition clearer and more concise than that in Section 701(4) of the Act without changing its substance.

1. One commenter suggested deleting the phrase "including mineral interests" from the definition of "Federal lands." No rationale was given. OSM has rejected this comment since it conflicts with the statutory definition in Section 701(4) of the Act which specifically includes "mineral interest" under the definition of "Federal lands."

2. Other commenters recommended a change in the definition to exempt private lands overlying federally owned coal rights. Exemption of privately owned surface was suggested in order to clarify Congressional intent that the private surface be controlled by the owner. Congress considered and provided protection for surface owners in Section 714 of the Act. An exemption for private surface would be a departure from the statutory definition. If private surface overlying Federal coal were exempted from the Federal lands definition then, arguably, the lands would fall under a State program and the State would serve as the regulatory authority over the extraction of Federal coal. This would be an unauthorized result, particularly, when under Section 714 of the Act the Federal Government would be leasing the coal under the Mineral Lands Leasing Act of 1920, as amended.

3. Another commenter suggested that the Section be revised to read "any land, including surface land or mineral interest," in order to make it clear that Federal surface overlying private coal is included in the definition of Federal lands. "Federal lands" are defined as "any lands . . . owned by the United States without regard to how the United States acquired ownership of the lands." Acquired surface lands with private mineral interests reserved are covered by the phrase "any lands." Since OSM's interpretation of the definition is consistent with the comment, OSM believes it is unnecessary to adopt the suggested language.

Indian lands. The proposed definition for Indian lands restructured the statutory definition and changed the punctuation somewhat. A number of comments were received.

1. One commenter suggested that the phrase "supervised by an Indian tribe" is ambiguous as used in the definition. The commenter recommended that such ambiguity be clarified by adding the phrase "excluding privately owned land" to the end of the definition. The Office believes that the commenter's suggested alternative would materially alter the definition, making it inconsistent with the intent of Congress and the Act. For this reason the Office rejected the commenter's recommendation.

2. Another commenter was concerned that the phrase "all lands including mineral interests held in trust for or supervised by an Indian tribe" may erroneously be construed to include those lands and mineral interests which Indian tribes may have purchased with tribal funds outside of designated reservations. Such construction, contends the commenter, would be contrary to the intent of Congress as shown by the legislative history of the Act. The commenter supports his argument with statements made before the Subcommittee on Public Lands and Resources of the Senate Committee on Energy and Natural Resources on S.7, 95th Congress, 1st Session, 626 (1977), and from later Senate debates concerning the question of whether Indian tribes should be treated essentially the same as States for the purpose of implementing the surface mining control program on Indian reservations. The commenter concludes that the definition of "Indian lands" should be revised so as to exclude specifically any Indian lands or mineral interests located out-

side the exterior boundaries of an Indian reservation.

The Office believes that the commenter's rationale, based on its review of the legislative history, is misleading because the portions of the legislative history cited by the commenter focus on that portion of the definition dealing with exterior boundaries of Indian reservations. The Office does not believe that this should be construed to mean that Congress intended to limit the definition to only include lands within an Indian reservation. On the contrary, the Office believes that the last portion of the definition clearly demonstrates that Congress intended to expand the definition to include Indian lands outside the exterior boundaries of Indian reservations. In fact, Section 710(h) of the Act explicitly directs the Secretary to "analyze and make recommendations regarding the jurisdictional status of Indian lands outside the exterior boundaries of Indian reservations." For these reasons, the Office elected not to adopt the revision suggested by the commenter.

3. A third commenter suggested that punctuation changes in the regulatory defintion materially change the meaning of Indian lands, as defined in the Act. The commenter, therefore, recommended the definition of Indian lands, in all respects, be identical to that provided by Section 701(9) of the Act. Because of the potential sensitive nature of the Indian lands issue and the fact that the pending Indian lands study, required under Section 710(a) of the Act, will be using the definition provided in the Act as basis for its analysis of issues, the Office concurs with the commenter's recommendation that the definition of Indian lands in the regulations be exactly as provided by the Act. The Office has, therefore, adopted the comment and has revised the definition of Indian lands to be consistent with that provided in Section 701(9) of the Act. By this editorial change the Office intends no substantive change one way or the other from the definition as it was proposed.

Person. The definition of this term amplifies the definition in Section 701(19) of the Act. The definition includes Indian tribes in those situations in which an Indian tribe may be conducting surface coal mining and reclamation operations on non-Indian lands. In addition, specified governmental agencies are included because under Section 524 of the Act, they are subject to regulation when engaged in surface coal mining and reclamation operations and because such agencies have definite interests in actions taken under the Act. (See discussion under Paragraph 3 below.) A joint venture was added to the definition of "person" on the basis that it is a type of business organization which should be specifically identified in the definition.

1. The Office received several comments which argued that the definition of "person" exceeds OSM's statutory authority because it is not identical to Section 701(19) of the Act. OSM is not required to adopt verbatim the statutory definitions in regulations implementing the Act. Section 201(c)(2) of the Act authorizes regulations which will carry out the purposes and objectives of the Act.

2. Commenters recommended deleting the reference to Indian tribes. Although Section 710 of the Act creates a separate regulatory scheme and timetable for surface coal mining operations on Indian lands, Indian tribes while conducting surface coal mining operations on non-Indian lands are subject to regulation as is any other "person." The Office has decided to retain the reference to Indian tribes in the definition.

3. The final definition of "person" has been changed from the proposed rule so as to delete the limitation that only government agencies proposing to conduct surface coal mining operations would be covered. A number of State government and industry commenters criticized the proposed definition of "person" on the basis that since it amplifies the statutory definition it would allow government agencies to sue other government agencies and also allow agencies to become involved in the hearing processes under the Act. Commenters felt that this would subject the regulatory authority to restrictions not imposed by the Act and subject it to liabilities never contemplated by Congress. It was further felt that the definition would provide particular problems in and among various State agencies by providing legal standing that currently does not exist and was not intended to exist under the Act.

It is true that a potential for interstate or intrastate conflict exists where the genuine interests of separate agencies may be involved. To a great extent however, the commenters' fears are unwarranted since the regulations allow appeals and suits only for persons "who are or may be adversely affected." (See, *e.g.*, 30 CFR 760.4(d), 764.13(a).) On balance, OSM has concluded that the purposes of the Act will be best served if the statutory definition is broadened to include governmental entities.

The Act mandates the involvement of and close coordination among many different agencies. Various agencies play important roles in the abandoned land's program in Title IV of the Act, in the regulatory process in terms of providing data, permit application reviews, performance standards compliance, and in designation of lands unsuitable for all or certain types of surface coal mining operation. (See Sections 503(a)(6), 504(b), 507(b)(11), 508(a)(9), 510(b)(3), 510(c), 515(b)(2)(8), 515(b)(10)(B), 515(b)(12), 515(c), 515(e) and 522 of the Act. See also the detailed discussion in the preamble to 30 CFR 786.11(c)(1)–(4), *infra.*)

OSM believes the involvement of other State and local agencies, which the Act specifies, establishes an interest on the part of those agencies in actions taken by the regulatory authority under State programs, particularly actions relating to permits and designations. Therefore, OSM believes that inclusion of the government agencies in the definition of "person" is justified. OSM does not intend by this to expand upon an agency's capacity to sue or be sued where the Act does not clearly indicate that the agency has an interest in the actions being taken. In such situations, existing principles of State or Federal law would govern.

4. One commenter suggested adding "cooperatives" to the definition of "person" because they are "a common form of doing business." Cooperatives are an increasingly more common form of business entity. Therefore, the Office agrees with the commenter and has added "cooperatives" to the definition of "person."

Person having an interest which is or may be adversely affected or person with a valid legal interest. The following references were used in developing this definition:

121 Cong. Rec. 13368 (May 7, 1975). H. Rep. No. 95-218, 95th Cong., 1st Sess., 90 (1977). S. Rep. No. 95-128, 95th Cong., 1st Sess., 87 (1977). 120 Cong. Rec. 25218-25219 (July 25, 1974). 119 Cong. Rec. 33190 (October 8, 1973). H.R. Rep. No. 93-1072, 93rd Cong., 2d Sess. 77-78 (1974). S. Rep. No. 28, 94th Cong., 1st Sess., 217 (1975). S. Rep. No. 93-402, 93rd Cong., 1st Sess., 56, 70 (1973).

Hearings on H.R. 2, before the Subcommittee on Energy and the Environment of the House Committee on Interior and Insular Affairs, 95th Cong., 1st Sess., Ser. No. 95-1, Pt. III at 495 (1977).

Hearings on S. 7 before the Subcommittee on Public Lands and Resources of the Senate Committee on Energy and Natural Resources, 95th Cong., 1st Sess., 167-170, 272, 1089 (1977).

Sierra Club v. *Morton*, 405 U.S. 727 (1972). *SCRAP II*, 412 U.S. 669.

Duke Power v. *Carolina Environmental Study Group*, 98 S. Ct. 2620, 46 U.S.L.W. 4845 (June 26, 1978).

1. In general, OSM received comments criticizing the regulation on the basis that the definition, for purposes of conveying standing, is too broad. Various commenters suggested the following revisions:

a. Delete "and enjoys" and "esthetic" from the definition.

b. Adopt the West Virginia Supreme Court of Appeals holding in *McGrudy*

v. *Callaghan*, 244 S.E. 2d 793 (W. Va. 1978), that the definition be restricted to persons whose property is affected.

c. Define the term to apply only to property which is or may be substantially and adversely affected.

d. Limit the definition to persons living in the geographic area of potential influence.

e. Insert "lawfully" before the words "uses and enjoys" in the definition.

f. Provide that the resource having economic, esthetic, or environmental value should be found within the permit area or the adjacent area.

g. Add "measurably" before "affected" in the definition.

h. Add "adversely" before "affected" in paragrahs (a) and (b).

The rationale for all the alternatives is that the proposed definition is too broad. Commenters suggested that limitations should be set which remove subjective judgments (alternatives a and g), require a direct impact upon a person's property (alternatives b and c), circumscribe the geographic area within which a person must reside to have standing (alternative d), and circumscribe the area of resource impact (alternative f).

None of the alternatives to the proposed definition cited by commenters refer to or attempt to rebut the legislative history. "It is the intent of the Committee that the phrase 'any person having an interest which is or may be adversely affected' shall be construed to be coterminous with the broadest standing requirements enunciated by the United States Supreme Court. Any resident of the United States injured in any manner through failure of any operator to comply with the provisions of this act, regulations issued thereto, order, or permits issued by the Secretary, may bring an action for damages in U.S. district court." H. Rep. No. 95-218, *supra* at 90. *Sierra Club* v. *Morton*, *supra*, is cited specifically in floor debates during 1973 as the latest Supreme Court decisions on standing. 119 Cong. Rec. 33190. "The Committee intends that this includes persons who meet the requirements for standing to sue set out by the Supreme Court in *Sierra Club* v. *Morton* (405 U.S. 727 (1972))." S. Rep. No. 94-28, *supra* at 217.

The proposed definition is consistent with the *Sierra Club* v. *Morton* holding. See also, *SCRAP II*, 412 U.S. 669. However, in response to the comment questioning inclusion of "enjoys," OSM agrees its inclusion is not necessary. The linchpin of the standing cases is "use." The phrase "uses and enjoys" could be interpreted as narrowing the scope of standing. Therefore, "and enjoys" has been deleted from the definition.

OSM has rejected other alternatives suggested in the comments. For instance, "esthetics" cannot be deleted. Cases on standing have long extended the right to sue to other than pure economic injury. *Sierra Club* v. *Morton* and others specifically mention esthetics as a basis for standing. Because economic injury is no longer a prerequisite to standing, and because recreational use falls within the concept of use set forth in *Sierra Club* v. *Morton*, OSM has added the word "recreational."

The West Virginia Supreme Court case is clearly narrower on the standing question than *Sierra Club* v. *Morton* and would not be consistent with what Congress intended. Cases do not require a showing of adverse impacts upon personal or real property or require persons to live in the geographic area of influence so long as use and injury in fact can be shown, nor do they require that injury be "substantial." The Office is convinced that the purpose of the Act will be best served by retaining the broader definition.

2. Other commenters recommended that the definition be referenced to current case law, particularly *Sierra Club* v. *Morton*, *supra*. It was suggested that this would help key the definition to Congressional intent. Legislative history is overwhelmingly clear that Congress had *Sierra Club* v. *Morton* in mind. However, the Supreme Court may someday change the concept of standing. Tying this definition to the latest Supreme Court case might work, but it would leave the definition up to lawyers to debate and give no guidance to the regulatory authority, the public, or operators. For these reasons OSM rejected this comment.

3. Other commenters recommended revising Paragraphs (a) and (b) of the definition to read "adversely affected." OSM has adopted this recommendation. The statute always includes "adversely" when using the phrase. See 30 U.S.C. §§ 507(b)(17), 513(b), 514 (c) and (f), 517(h)(1), 520(a), 522(c), 525(a)(1), 601(c). The revision is also consistent with the accepted concept of standing.

4. Other commenters suggested that "persons whose interests are or may be adversely affected" be separately defined from "person with a valid legal interest," rather than combining the two terms. "Persons whose interests are or may be adversely affected" is used in 30 U.S.C. §§ 507(b)(17), 513(b), 514(c), 514(f), 517(h)(1), 520(a), 522(c), 525(a)(1), 601(c). "Person with a valid legal interest" is used only in 30 U.S.C. § 519(f) dealing with persons adversely affected by release of the bond. The best understanding of legislative history is that Congress intended to use the same standing test throughout the Act. There is no explanation of why the test in 30 U.S.C. § 519(f) should be any different. Testimony in Congressional hearings shows people using the two phrases interchangeably. Therefore, OSM has decided to define both phrases the same way. (See H.R. Rep. No. 93-1072, *supra* at 77-78.)

Public office. This definition is included in the regulations to identify the kind of office in which records required by the Act to be made available to the public will be placed.

Regulatory authority. The definition of this term in subsection 701(22) of the Act has been expanded to include situations not covered by the statutory definition. Specifically, the Secretary is defined as the regulatory authority under a Federal lands program. The Federal lands program is a regulatory program in most respects comparable to a State program or a Federal program. Section 523 of the Act requires the Federal lands program to incorporate, at a minimum, all requirements of the Act. For this reason and for ease of reference in the regulations, the Secretary is defined as the regulatory authority for a Federal lands program.

1. Several commenters suggested deleting "or the Secretary when administering the Federal lands program" from the definition of regulatory authority, because subsection 701(22) of the Act does not include the Secretary as the regulatory authority on Federal lands. These commenters believe that the definition may be misleading when the State has a cooperative agreement covering Federal lands, and State regulations are applied.

OSM considered expanding the definition to show that the State was also the regulatory authority on Federal lands if it had a cooperative agreement pursuant to 30 CFR Part 745. However, the State would not have all the responsibilities of the regulatory authority, because the Secretary cannot delegate the designating lands as suitable for mining or mining plan approval functions. OSM has decided that the purposes of the Act will be best served if no change is made in the definition. The definition is a legitimate exercise of authority granted in Section 201(c)(2) of the Act. OSM believes that not stating that the State is the regulatory authority on Federal lands does not prejudice in any way the cooperative agreement process or the actual implementation of the agreement.

Secretary. The Office has not accepted a comment that "or his representative" be deleted from the definition of Secretary because the Act specifies the Secretary and not the Secretary's representative. Section 201(c) of the Act states "The Secretary, acting through the Office, shall . . . ."

Therefore, Congress has specifically provided that the Secretary would act through OSM personnel. The Act also refers to the Secretary in circumstances which clearly mean his or her representative. For instance, the Secretary cannot personally carry out all the functions, make necessary investigations and inspections or take field enforcement actions, as provided in Sections 201(c)(1) and 521 of the Act on 6,000 to 7,000 coal mines across the country. Therefore, the definition as proposed is necessary to fulfill the terms of the Act.

State regulatory authority. The State regulatory authority is defined as the State agency which has primary responsibility at the State level for administering the regulatory programs.

1. OSM received suggestions that the definition of State regulatory authority be made more explicit regarding the delegation of regulatory program responsibilities to other State agencies.

Subsection 701(26) of the Act and the regulation give some flexibility by defining State regulatory authority as the department or agency having *primary* responsibility. The use of "primary responsibility" indicates that one State agency is to be designated the regulatory authority for purposes of dealing with the Office. The definition does not prevent States from assigning specified responsibilities to other agencies, using memorandums of understanding or other working agreements between the regulatory authority and the other State agency or agencies, in order that there will be a uniform, coordinated State program. (See 43 FR 41666 (September 18, 1978)). Employees of other State agencies assuming functions under a State program will have to comply with the conflict of interest requirements in 30 CFR Part 705, 42 FR 56060—56069 (October 20, 1977). OSM believes the language of the regulation is sufficient to establish that the State regulatory authority may delegate certain of its responsibilities.

2. One commenter recommended deletion of either the entire definition "State regulatory authority" or else the first half of the definition "regulatory authority" because the two definitions are essentially duplicative.

Subsections 701 (22) and (26) of the Act define both terms. Although the definition of "State regulatory authority" is covered by the language in the definition of "regulatory authority," OSM believes retaining the definition will be helpful in highlighting the meaning of the State regulatory authority, especially with regard to its authority to delegate certain responsibilities.

Surface coal mining operations. The definition of surface coal mining operations follows the statutory definition, except that it includes in a proviso clause reference to extraction of coal from coal refuse piles as falling within the definition. The proposed regulation also included extraction of coal from refuse piles, but placed the relevant language in the main text of the definition.

1. A number of comments received by OSM recommended deletion of "extraction of coal from coal refuse piles." Although this change would make the definition conform to the definition in Section 701(28) of the Act, it would reintroduce the uncertainties about the regulatory coverage of mining of refuse piles. Mining of refuse piles can be as environmentally harmful as any other mining; but, like the remining of previously mined areas, if mining and reclamation are done correctly there can be a substantial improvement. Analysis of the statute and legislative history has convinced the Office that such extraction is an operation intended to be regulated under the Act. Congress specifically exempted certain mining activities in 701(28) and 528 of the Act. Rather than including remining of refuse piles among the exemptions, Congress wrote a comprehensive definition of surface coal mining operations. Therefore, OSM has decided not to change the definition. For a thorough analysis of the Act and its legislative history, see letter from the Solicitor, Leo Krulitz, to Representative Gus Yatron, dated March 13, 1978.

2. OSM has also rejected a related recommendation, which would add language to exempt specifically from the definition "extraction of coal incidental to abandoned mine reclamation operations." The commenter suggested no rationale for this. Abandoned mine land reclamation projects are conducted in accordance with 30 CFR Part 874 and other requirements in Subchapter R. OSM does not believe this comment, which would have the effect of exempting completely abandoned mine land reclamation from Title V of the Act, should be adopted without thorough justification supplied by the commenter or full analysis of the implications.

3. It was recommended that the definition of surface coal mining operations exclude private excavation which results in the incidental recovery of coal. The thrust of this comment was considered with other comments on 30 CFR Part 707, where it was decided that to accept it would be inconsistent with Section 528(3) of the Act. Therefore it is inappropriate to make any change in this definition.

4. The Office has also rejected a recommendation to add to the proviso concerning coal extraction incidential to the extraction of other minerals in the definition of surface coal mining operations the phrase "or stockpiles of coal located at wholesale or retail sale yards, or at residential, commercial or industrial use sites." The commenter, without citing legislative history, believes Congress did not intend to regulate stockpiles of coal at user sites. Section 701(28)(B) of the Act refers to stockpiles in the context of areas upon which the activities in Paragraph (A) occur or where such activities disturb the natural land surface. Such activities which include cleaning, concentrating, or other processing or preparation could, under some factual situations, occur at user sites. Therefore, OSM does not believe a blanket exemption for stockpiles at user sites should be written into the definition. Instead, OSM will apply the definition on a case-by-case basis to determine its applicability taking into account such factors as whether the environmental and public health and safety effects of such stockpiles are regulated by other Federal or State agencies. At this time OSM does not contemplate wholesale regulation of coal stockpiles at user sites.

5. Several commenters suggested the definition be changed to cover more clearly site preparation activities by adding to the activities listed in Paragraph (a) such things as "timbering and land-clearing operations" and "removal of vegetation in anticipation of excavation of the coal." OSM believes that logging and site preparation in anticipation of mining clearly fall within the definition. However, the line between site preparation in anticipation of mining coal and independent work is sometimes difficult to draw, and can only be accurately drawn after experience with specific factual situations. After such experience, OSM may develop guidelines or propose amendments to the regulations if necessary. Therefore, OSM decided not to change the definition.

6. OSM has also rejected a recommendation that "crushing and screening" be added to the definition. The statutory and regulatory definitions include "physical processing" and "or other processing or preparation," terms which are readily interpreted to include crushing and screening.

7. Another commenter recommended the addition of the word "adjacent" to the definition of surface coal mining operations before "lands affected by the construction of new roads or the improvement or use of existing roads in paragraph (b)." The commenter argues that the definition is too broad without such a limitation. OSM has not adopted the suggestion since this would limit the statutory definition which specifically covers "all roads." Given the remedial nature of the Act, a limitation on protection of affected

areas without persuasive justification should not be adopted. (See also the discussion of the definition of "adjacent area" in the preamble to Section 701.5 below.)

8. Changes have been made in the permit and performance standard provisions of the rules to reflect the Office's interpretation that the phrase "at or near the minesite," used in the statutory definition of "surface coal mining operations," modifies only "loading of coal." The Office interprets the Act as setting no territorial limitation on its jurisdiction over other facilities identified in the statutory definition preceding "loading of coal."

Resulting from or incident to. The Office received comments which recommended changing the proposed definition of "resulting from or incident to."

1. A suggestion that the term be defined as "the reaction or outcome which would naturally or logically follow an action" appears to make no major change in the proposed definition.

2. Another commenter recommended the term be defined as "any documented cause and effect relationship."

OSM has decided not to define this term believing that a meaningful definition which would cover all situations is not possible. The causal relationship between the activities included in the definition of surface coal mining operations and the enumerated structures and facilities referred to as "resulting from or incident to such activities" cannot be accurately stated in a definition. Instead, the concept will have to be developed by application to case-by-case situations.

Other minerals (proposed definition). OSM received two comments recommending the addition of a definition of "other minerals" in order to prevent operators, who are in fact mining coal, from using the loophole of "other minerals" when coal does not exceed 16⅔ percent of the other mineral. The commenters cited an enforcement action arising under initial program regulations in which an operator alleged he was exempt from the Act because he was removing overburden as fill for a commercial construction project and that the coal being removed as an incidental matter was less than 16⅔ percent of the tonnage of the overburden.

OSM believes that situations such as this can be taken care of by case-by-case inspection and enforcement actions. The Act defines "other minerals" in Section 701(14). Application of this definition to the phrase as it appears in the definition of surface coal mining operations should prevent abuse. For dirt or earth to be included within the definition, an operator would have to show that the dirt or earth had commercial value and that coal was only an incidental byproduct of the extraction operation that amounted to less than 16⅔ percent of the tonnage of the earth. Moreover, ambiguous cases would be governed by enforcement consistent with the remedial purposes of the Act.

§ 700.11 Applicability.

Authority for this Section is Sections 528, 701 and 710 of the Act.

This Section repeats the exemption for those surface coal mining and reclamation operations which are exempted from regulation by the statute. Paragraphs (a) and (b) of this Section repeat the language of the statutory exemptions in Section 528 of the Act. Language is added to Paragraph (a) to limit the concept of noncommercial use based upon applicable legislative history. (S. Rep. 95-128, No. 95th Cong., 1st Sess. 97-98 (1977)).

1. Several commenters suggested revisions in the exemptions of Section 700.11. It was argued that the specific exemption of "landowner" in subsection (a) implies that "nonlandowners" do not share the exemption. Subsection (a) follows the language of Section 528(1) of the Act in this respect. Lacking clear congressional direction in the language of Section 528(1) of the Act or its legislative history, OSM is not prepared at this time to depart from the statutory language as suggested by the commenter.

2. A number of comments were received on Section 701.11(b). That section as proposed added language to that which appears in Section 528(2) of the Act for the purpose of eliminating interpretations of the statutory exemption which OSM felt would be contrary to congressional intent (see 43 FR 41666, September 18, 1978). Some commenters approved of the proposed language saying that without it, the 2-acre exemption "constitutes a tremendous loophole which would be continuously abused." Without some limitation commenters were concerned about unpermitted operators circumventing the law by skipping from one less than 2-acre site to another without reclamation. Other commenters felt the language was too restrictive. Specifically, commenters suggested (1) deleting the words "or intends to affect," (2) adding the phrase "at a single site or combination of sites," (3) adding a time limitation on the phrase "or intends to affect" and (4) substituting 250 tons as the basis for the exemption rather than 2 acres. OSM has rejected the suggested deletion of the words "or intends to affect." The language is in the regulation to clarify that the first 2 acres of a larger operation or a series of less than 2-acre operations that are actually one mine are not excluded. This is felt to be the proper interpretation of congressional intent.

OSM has responded to other comments by changing the proposed language in Paragraph (b) to clarify that the Act and the regulations do not exempt operations conducted by the same operator at several sites that together exceed 2 acres regardless of whether they are situated so as to be considered one mine. However, OSM agrees in part with commenters who suggested that a time period should apply to operators intending to affect less than 2 acres. OSM believes that the time period should apply only to operations at physically unrelated sites such that an operator would be exempt from the Act and regulations if he or she affected a total of less than 2 acres at physically unrelated sites within 1 year. If the operator affected a total of more than 2 acres at physically unrelated sites within 1 year, he or she would not be exempt from the Act or regulations.

If a time period were not adopted, an operator would only be exempt from the Act and regulations for one 2-acre surface coal mining operation during his or her lifetime. Lacking a clear indication that this is what Congress intended, OSM does not believe such a limitation would be fair or is necessary to fulfill the intent of this section of the Act. Adding the 1-year time limitation is also responsive to the comment that the phrase "or intends to affect" might cover operations planned years in the future and miles away.

The time limitation should not apply to physically related sites, however, or else the mining of what is in reality a larger nonexempt mine may fall within the exemption. Should the 1-year period apply to physically related sites, an operator could phase the operation so as to affect less than 2 acres per year and qualify for the exemption.

OSM has rejected a suggestion to substitute 250 tons as the standard for exemption instead of 2 acres, as 250 tons is a limitation on the Act's coverage in the definition of "operator" in Section 701(13) of the Act. It is in addition to, not a substitute for, Section 528 of the Act and OSM cannot change an explicit standard in the Act such as the 2-acre standard.

3. Commenters suggested that proposed Paragraph (c), which has been redesignated as Paragraph (d), should be stricken or changed. That paragraph refers to the exemption based on Section 528(3) of the Act and is explained in Part 707 of the regulations. It governs coal extraction which is an incidental part of Federal, State, or local government-financed highway or other construction. The thrust of the

comment was considered and rejected in Part 707 and therefore cannot lead to a change in Section 700.11. For further discussion see the preamble to Part 707.

4. The Office has added a new Paragraph (c) and relettered the Paragraphs that follow. Paragraph (c) sets forth the exemption provided by Section 701(13) of the Act in the definition of the word "operator" for persons who remove 250 tons of coal or less. The word "operator" is not used in the Act in all places at which responsibilities are imposed on those who mine coal. However, there appears to be no rational scheme for the use of the word "operator" and the use of words such as "persons" or "permittee." This unsystematic usage not only tends to support a broad exemption from Federal regulations for removing 250 tons or less of coal during a surface coal mining operation but also ensures that, if the exemption were limited to those sections of the Act where the word "operator" is used, the results would be an irrational and confusing regulatory scheme. Thus, the Office has adopted 250 tons of coal or less as a general exemption from regulation of surface coal mining and reclamation operations.

This exemption does not apply to coal exploration. Section 512 of the Act regulates coal exploration without regard to how much coal is removed in the process, although Section 512(d) hinges a requirement of prior approval on removal of more than 250 tons. The exemption of mining 250 tons or less, and the regulation of exploration that removes 250 tons or less, is consistent and rational. Explorations can have substantial adverse impacts over a relatively large area with the removal of only insignificant amounts of coal. Moreover, the regulatory burden on coal exploration is considerably lighter than that on a surface coal mining and reclamation operations.

5. Proposed Paragraph (d), which has been redesignated as Paragraph (e), provides the exemption for coal extracted incidental to the extraction of other minerals, an exemption which appears in the definition of surface coal mining operations in Section 701(28) of the Act.

6. One commenter suggested that mining on Indian lands should not be exempted from Paragraph (e) of the proposed Section, which has been redesignated as Paragraph (f). Regulations implementing Section 710 of the Act for the mining of coal on Indian lands are located in 25 CFR Part 177. Therefore, it is appropriate to exclude that category of mining from regulations in 30 CFR Chapter VII.

7. It was suggested that proposed Paragraph (f), which has been redesignated as Paragraph (g), be deleted in order that coal exploration on Federal lands outside the permit area be included under the coverage of the Chapter. This proposal was rejected. Section 512(e) of the Act provides that exploration on Federal lands is to be regulated under Section 4 of the Federal Coal Leasing Amendments Act of 1975, and not under SMCRA. However, Section 4 applies only to coal exploration on unleased lands. Because of this, OSM believes the Act does not prevent OSM from regulating coal exploration within permit areas on Federal lands. See the preamble to Part 740 for more discussion.

8. Finally, it was suggested that the exemptions be expanded to exclude all small operators from coverage by the Act until the law and regulations can be changed. OSM has declined to follow this suggestion. OSM cannot create new exemptions not authorized in the Act where it is clear that Congress considered the Act's application to small operators and specified certain exemptions in Sections 502(c) and 507(c), and the definition of operator in Section 701.

§ 700.12 Petitions to initiate rulemaking.

Authority for this Section is found in Section 201(g) of the Act which provides a petitioning process for initiation of a proceeding to issue, amend, or repeal rules issued under the Act. This process is set forth in Section 700.12 of the regulations and is basically the same as that of the initial regulatory program.

A change from the initial program regulation on petitions places a burden upon the petitioner to present facts, technical justification, and legal arguments which support the petition. If the petition concerns an existing rule, it must present justifications and arguments not considered in the previous rulemaking. The Director has authority to reject a petition which does not provide this information and create a reasonable basis for further consideration of the need to issue, amend or repeal a rule. This is also intended to eliminate the need for further consideration of petitions which are frivolous and do not provide a minimum threshold of information meriting the initiation of the administrative process.

The Director's decision on a petition is a final decision for the Department. This has the effect of opening the opportunity for judicial review of the decision without further appeals within the Department.

1. In response to a comment on Section 700.12, OSM has eliminated "State or local government" from Paragraph (a). The reference is not required because State and local governments are included in the definition of "person," thereby entitling them to petition.

2. OSM has rejected comments which suggested that Paragraph (c) be changed to provide for direct notification to the petitioner rather than publication in the FEDERAL REGISTER. OSM feels notification in the FEDERAL REGISTER is the better course because it notifies the broadest possible group who may be interested in the petition.

3. It was also suggested that Paragraph (c) be changed to require a public hearing. OSM believes that a public hearing may not be necessary in all cases. It is sufficient, therefore, to provide for discretionary hearings. If hearings on the petition would be helpful, OSM anticipates holding them. Hearings will be conducted as part of the rulemaking process if one is initiated.

4. Some commenters recommended revising the Section to provide for judicial review pursuant to Section 526 of the Act if a petition is denied. By making the Director's decision final for the Department, the decision will be subject to judicial review. Specifying that judicial review is pursuant to Section 526 of the Act is unnecessary. Section 526 is applicable according to its terms. Adding language to the regulation could not serve to confer jurisdiction under Section 526 if Section 526 did not confer jurisdiction by its own terms.

5. A commenter suggested adding "practical reasons for the change, . . . if any" to 700.12(b) saying this is one of the most important things to consider when deciding whether to amend a rule. OSM agrees that practical reasons are important factors to consider but believes these will be reflected through "facts" which merit issuing or amending a rule. Therefore, because "facts" are included in 700.12(b), OSM found no reason to add the suggested language.

6. Commenters recommended deleting from 700.12(c) the sentence "facts, technical justification, or law previously considered in a petition on rulemaking on the same issue shall not be found to provide a reasonable basis." The commenters felt that situations, ideas and experience with a rule over time may change and make previously rejected facts, technical justification or law relevant. OSM agrees with this rationale but once again feels that the commenters' concern is addressed by the final language. In essence, the commenters are saying that over time facts concerning the implementation or experience with a regulation may change. Therefore, new facts would be relevant to a decision whether to issue or amend a rule and would be considered. For this reason, OSM has not adopted the commenters' suggestion.

7. A commenter suggested deleting "technical justification" from 700.12(b) and revising 700.12(c) to require publication of a notice in the FEDERAL REGISTER on every petition, regardless of whether it was supported by new facts, technical justification or law. The commenter suggested that the technical justification is to be elicited by the notice process and its absence in the petition should not preclude publication of the petition in the FEDERAL REGISTER.

OSM has rejected this comment. Section 201(g)(2) of the Act requires that petitions set forth the "facts" claimed to establish the need to issue, amend or repeal a rule. OSM believes it to be within its rulemaking authority in Section 201(c)(2) of the Act to amplify what is meant by "facts" to include technical justification and legal issues in order to limit frivolous or unsubstantiated petitions. Such petitions could be used as an attempt to divert OSM personnel from fulfilling other functions under the Act and regulatory program by consuming their time and energy in processing unsubstantiated petitions. Thus, some minimum threshold is essential. OSM does not, however, intend to apply this standard so rigorously as to deny petitions which present a minimal justification which establishes the need to issue, amend or repeal a rule.

8. A commenter objected to the Director's decision granting or denying a petition being final for the Department. Instead the commenter suggested an administrative appeal mechanism be substituted which the commenter felt would provide a less burdensome recourse from the Director's decision.

OSM has not adopted this suggestion. OSM believes the factors which will be the basis for granting or denying a petition are fundamental to the Director's management and administration of the Act. For this reason the basis for the Director's decision is best reviewed by a court rather than an administrative review board of the Department.

§ 700.13 Notice of citizen suits.

This regulation is repeated from the initial program regulations, with only minor changes for clarification.

1. OSM received comments suggesting that the alleged violator needs more protection pertaining to notification. One recommendation would add a requirement to Paragraph (e)(1) that the complainant state an exact reference to the allegedly violated provision. This suggestion would have more force if Section 700.13 were dealing with a court pleading which almost certainly would be prepared by an attorney. However, Section 700.13 deals only with notice of intent to sue and may be prepared by a nonattorney. For that reason, the requirement to provide information which is sufficient to advise the recipient of the alleged violation was used rather then requiring citation to the specific regulation alleged to be violated. OSM believes retaining this approach is better since the recipient will receive enough information to understand the basis of the accusation.

2. Other commenters suggested replacing Paragraph (d) with a provision that completion of service be made in accordance with either local court rules or the Federal Rules of Civil Procedure. This is an appropriate comment for the filing of a suit but not for the the 60-day notice. OSM feels that imposing that degree of formality on the notice of intent to sue is unnecessary.

3. It was also suggested that the requirement of service by certified mail be deleted from the Section because it is not required in the Act and is burdensome and costly. Certification serves as proof that a letter has been sent to the Secretary of the Interior, the OSM Director, the appropriate State regulatory authority, and the alleged violator. Certification also provides a precise date for determining the beginning of the 60-day period. Finally, certification serves as protection for the citizen in the event the letter is not received by one of the parties. OSM has decided to retain the requirement because the burden and cost are small in comparison to the certainty provided.

4. One commenter also expressed concern that operators will be subject to harassment through unwarranted citizen suits, and, therefore, recommended that a Section be added to the regulations, comparable to Section 518(g) of the Act, providing a criminal penalty for frivolous and unwarranted accusations. Section 518(g) of the Act would apply to certain citizen actions of concern to the commenter. Although the provision could be repeated in the regulations, other statutory criminal sanctions are not being repeated. OSM cannot by regulation create criminal sanctions for those actions of concern to the commenter which are not covered by Subsection 518(g) of the Act. That power is reserved to Congress.

§ 700.14 Availability of records.

Paragraph (a) indicates that the records are to be available at the office of the regulatory authority geographically closest to the area to which the document pertains.

1. One commenter suggested changing the Section to require that records "be retained at the mine office and sent to the appropriate State or Federal regulatory authority having jurisdiction over the area on request only." The comment misconstrues the applicability of the regulation. The regulation applies to OSM and the States, not operators.

2. Another comment recommended that Paragraph (a) be reworded to clarify where records are to be made available. OSM believes, however, that the wording of Paragraph (a) is sufficient to indicate that records are to be retained at the regulatory authority office which is geographically closest to the area involved.

§ 700.15 Computation of time.

These regulations are repeated from the initial program regulations, with only minor changes for clarification.

The Office has considered a suggestion that "work stoppages due to labor disputes" be excluded from the computation of time. This Section on computation of time is merely a mechanical aid and is completely neutral on policy. The thrust of the comment is aimed at the legal or statutory interpretation or policy issue of whether a strike or labor interruption is a defense to an enforcement action and was, therefore, considered under Section 843.18. The Office decided that no change in the method of computing time under Section 700.15 is warranted.

PART 701—PERMANENT REGULATORY PROGRAM

Authority for regulations in this Part is found in Sections 102, 201, Title V, 701, 702, 708, 710, 711, 713, 714, 715, 716, 717, and 719 of the Act.

Part 701 of these regulations serves as a general introduction to the permanent regulatory programs promulgated in accordance with the requirements of Section 501(b) of the Act. For a general explanation of the rationale for Part 701 and its relationship to the initial regulatory program and regulation of surface coal mine operations on Indian lands, see the discussion in the preamble to the proposed rules in 43 FR 41666–41667 (September 18, 1978).

§ 701.1 Scope.

1. This Section identifies the Subchapters in Chapter VII of 30 CFR which comprise the permanent regulatory program. It indicates under which Subchapter the various regulatory components of the permanent regulatory program may be found. Section 701.1 has not materially changed from that proposed on September 18, 1978.

2. Although Section 701.1(b)(8) refers to Subchapter M on the training, examination and certification of blasters, this Subchapter is not being promulgated in final form at this time. Instead, the Subchapter will be reproposed for additional public comment

due to the nature of the changes which will need to be made by the Office of Surface Mining in response to public comment and internal review. See explanation for this under preamble to Subchapter M.

§ 701.2 Objectives.

This Section summarizes the objectives to be achieved by Part 701. Other than nonsubstantive, editorial changes, this Section has not changed from that proposed on September 18, 1978.

§ 701.3 Authority.

This Section reiterates the authority conferred upon the Secretary by Sections 501(b) and 523 of the Surface Mining Control and Reclamation Act to promulgate regulations implementing the permanent regulatory program. The final sentence as it appeared in the proposed regulations of September 18, 1978, has been deleted. The deleted sentence indicated that the Secretary had delegated his rulemaking authority to the Director of the Office of Surface Mining. Delegation of authority to promulgate these regulations is an internal administrative matter within the Department of the Interior. Rules and amendments to them relating to the permanent regulatory program may, in some cases, be promulgated by the Secretary and in other cases by the Director. The deletion of this sentence is necessary to preserve this internal administrative flexibility.

§ 701.4 Responsibility.

Authority for this Section is found in the Act at Sections 102, 201, 501, 503, 504, 512, 517, 521, and 523. The basic rationale and purpose of this Section is set forth in the preamble on the proposed regulations at 43 FR 41667 (September 18, 1978). Comments were received on this Section which have resulted in certain changes being made for the final regulations.

1. A commenter suggested that the language in Section 701.4(a) be changed to indicate that the State regulatory authority "shall" assume primary responsibility for regulation if its program is approved, rather than the State regulatory authority "may" assume such responsibility. The commenter suggested that the word implied some degree of residual discretion or subsequent action by the Secretary. The use of the word "may" in the proposed regulations was not intended to suggest such residual discretion in the Secretary, but rather that the State has the choice initially whether to request program approval in order to assume primary jurisdiction. In response to the comment and because, if the program is approved, the State is required to assume primary responsibility, OSM has accepted the comment and substituted the word "shall" for the word "may" in the first sentence of Section 701.4(a).

2. Comments were received suggesting that the use of the word "primary" in the first sentence of Section 701.4(a) did not reflect the statutory language and should be replaced with the word "exclusive." Section 503 of the Act uses the phrase "exclusive jurisdiction." However, that phrase is followed by the clause "except as provided in Sections 521 and 523 and Title IV of this Act." OSM believes that use of the word "exclusive" is misleading because, in fact, the Office of Surface Mining retains certain responsibilities during an approved State program. For example, OSM inspectors can issue notices of violation and cessation orders under Section 521(a) in those instances where a State fails to act after being notified by OSM of a potential violation. Furthermore, the State's jurisdiction is not exclusive on Federal lands and applies only if a cooperative agreement exists pursuant to Section 523(c). Even with such a cooperative agreement, the Secretary retains the duty to approve mining plans on Federal lands and to designate, pursuant to Section 522 of the Act, certain Federal lands as unsuitable for surface coal mining. Because of these responsibilities which remain with the Secretary, OSM believes that the word "primary" more accurately reflects the Federal and State relationship during implementation of a State program.

3. A commenter suggested that the language in Section 701.4(b) be changed to read "while a state regulatory program is in effect, the Office's primary responsibility includes . . ." The commenter felt this change would more accurately describe the Federal and State relationship during implementation of a State program. Another commenter suggested that this Section should state that "while a State regulatory program is in effect, the Office's responsibility is limited to . . ." The Office considered these alternatives. With respect to the first alternative, including the word "primary", and deleting the words "but is not limited to . . ." would make no substantive change in the language and would not serve to clarify the meaning. The second alternative would limit the responsibility of OSM to only the three items mentioned. The items identified are intended to signify OSM's major areas of responsibility, but because other areas of responsibility may arise under the Act, OSM does not believe this Section should represent an exclusive list of responsibilities. See, for example, 30 CFR 785.13.

4. Section 701.4(b)(3) is new in the final regulations and reflects comments received and OSM's analysis of its statutory authority. The proposed regulations published on September 18, 1978, and the preamble to this Section indicated that during an approved State program, OSM inspectors could issue cessation orders should a State fail to act in response to information referred to it by OSM pursuant to Section 521(a) of the statute. Commenters suggested that OSM's authority was not limited to issuing cessation orders under these circumstances, but also included authority to issue notices of violation. Based on these comments and OSM's analysis of the Act, Section 701.4(b)(3) has been added to reflect OSM's authority to issue notices of violation. Readers are referred to the preamble at Section 843.12(a)(2) of the regulations for a fuller explanation of the rationale and authority for this provision.

§ 701.4(b)(4)

This Section appeared in the proposed regulations as Section 701.4(b)(3) and has been redesignated to provide for the new Section 701.4(b)(3). This Section remains unchanged from the proposed regulation, except with a clause added to clarify an inspector's authority to include affirmative obligations when issuing cessation orders. This authority is derived from Sections 102, 201, and 521(a)(2) of the Act. This language is added merely to clarify and be consistent with the operative provisions of the regulations at Section 843.11.

§ 701.4(c)

This provision of the regulations sets forth the responsibilities of the Office with respect to implementing a Federal program in a State. This Section is the same as it appeared in the regulations, except for minor editorial changes intended to clarify the Section's meaning but not to change its scope or intent.

§ 701.4(d)

This Section sets forth the responsibilities of the Office to function as the regulatory authority upon implementation of a Federal program in a State. This Section is changed from the proposed regulations by editing for clarity only.

§ 701.4(e)

This provision of the regulations refers to the Office's authority under Section 521(b) of the Act to assume responsibility for enforcing permit conditions, issuing new or revised permits, and issuing necessary notices and orders when a State fails to enforce effectively all or any part of its approved State program. This Section refers to Part 733 of the regulations which sets forth the process which

will be followed by OSM should it become necessary to assume such responsibilities.

A comment was received suggesting that OSM include in this Section specific examples of when a Federal takeover of this sort would occur. The commenter suggested that the bases for such takeover could include (1) inadequate inspection and permit application review staff, (2) failure on the part of the State regulatory authority to prosecute violations, or (3) failure of the State to have an acceptable designation process.

The essence of this comment was considered in connection with comments raised in Part 733 of these regulations. The criteria used in the regulations in Part 733 refer to failure on the part of the State to implement, administer, maintain, or enforce adequately a part or all of the State program. OSM decided to leave these general criteria in the final regulations rather than specify factual situations in which Federal enforcement might be substituted in order to maintain administrative flexibility. In certain situations, the examples given by the commenter might well be the basis for withdrawing approval of a State program under Section 504 of the Act. However, in other situations, the examples might prompt OSM enforcement of a State program under Section 521(b) of the Act. OSM believes that an exhaustive list of factual examples would not be possible. The reader is referred to the preamble to Part 733 for further discussion of this issue.

§ 701.4(f)

This provision of the regulations sets forth the Secretary's responsibilities for substitution of a Federal program for an approved State program. The final regulations have identified this responsibility with the Secretary rather than with the Office. At this time, it is anticipated that the actions described would be taken by the Secretary rather than the Director. The Director may be delegated the authority at a later date through the Department of the Interior's internal procedures.

§ 701.4(g)

This Section was inserted in the final regulations to show the Secretary's responsibilities with respect to Federal lands. It provides, by reference to Subchapter D, that certain responsibilities are to be retained by the Secretary, others normally held by the Secretary are delegated to the Director, and still others are shared with State regulatory authorities under cooperative agreements.

§ 701.5 Definitions.

The terms in this Section are defined under authority of Sections 102, 201, 501, 502, 503, 504, 506, 507, 508, 510, 511, 513, 514, 515, 516, 517, 521, 522, 523, and 701 of the Act. The basis and purpose of this section was generally explained at 43 *Fed Reg.* 41667-41671 (Sept. 18, 1978).

Definitions which apply during the permanent program and which have the same meaning in more than one Subchapter of Chapter VII are in Section 701.5. Definitions generally applicable to all of Chapter VII are in Part 700. If a defined term is used as defined only in one Subchapter, Part or Section of the regulations, the term is defined in that Subchapter, Part or Section. The Office believes that the words not defined in the regulations have generally accepted meanings that will not lead to ambiguity or misinterpretation.

The principal sources of technical definitions are American Geological Institute, Glossary of Geology, 1972; American Society of Civil Engineers, Nomenclature of Hydraulics, 1962; U.S. Bureau of Mines, Dictionary of Mining, Mineral, and Related Terms, 1968; Bituminous Coal Institute, Glossary of Current and Common Bituminous Coal Mining Terms, 1947; Soil Science Society of America, Glossary of Soil Science Terms, 1970; and Soil Conservation Society of America, Resources Conservation Glossary, 1976. Numerous comments were received primarily recommending various changes in the definitions.

Acid drainage 1. Acid drainage from coal mines has been a problem since coal first was mined in the 1700's in the United States. Although acid formation is a natural phenomenon in certain hydrogeologic settings, mining of coal has resulted in a widespread acid problem by exposing vast quantities of acid-producing material to an oxidizing environment (Braley, 1954, pp. 1-3; See Final EIS at BIII-30/31.) The U.S. Environmental Protection Agency defines acid mine drainage, as "any acidic water draining or flowing on, or having drained or flowed off, any area of land affected by mining." (EPA-670/2-74-093, 1974, p. 214). Technically, all water having a pH of less than 7.0 and draining from a mining area may be considered acid mine drainage.

However, because USEPA has set a minimum pH of 6.0 for its effluent limitations (EPA-490/1-76/057-a, 1976, Sec. VI) and because pH values outside the range of 6.0-8.5 in natural waters are indicative of stress, the Office has elected to consider water having a pH of less than 6.0 and draining from mining areas as "acid mine drainage." This is the primary basis for the terms "acid drainage" and/or "acid mine drainage" in Sections 816.50 and 817.55 of the regulations and Section BIII, page 30 of the Final Environmental Statement (OSM-EIS-1979).

2. The occurrence of acid drainage from nonmined natural settings has been documented by Braley (1954, pp. 1-3) and other investigators; such situations are not within the regulatory scope of the Act. However, when mining activities are proposed or conducted in such areas, it is presumed that the permit applicant has prior knowledge of natural acid production and the probability of augmenting acid production by mining. (See 30 CFR 779.14, 779.16(b), 783.14, 783.16(b).) The Office believes that the operator must assume responsibility for the environmental consequences of mining in these areas and, therefore, assumes responsibility for acid production and acid drainage. There is no known feasible way, once mining has altered the natural geohydrologic environment, to separate the effects of "natural" acid production from those resulting from mining activities.

3. When preliminary hydrologic and soils investigations show that those materials will yield drainage with pH values of less than 6.0, the Office believes that adequate forewarning of the likelihood of encountering acid-producing conditions exists, and that these data may be useful in making management decisions to acquire treatment facilities or to decline mining. Whether a mine is termed "active" or "inactive" has no bearing upon the concept of acid drainage, only upon fixing responsibility of remedial efforts as required by the Act. Therefore, as a definitional matter, acid drainage is defined to include any such drainage from coal mining.

4. The definition was expanded to include the phrase "and in which total acidity exceeds total alkalinity." This was done because the pH alone can occasionally be insufficient as an indication of acid drainage. Occasionally, a stream in its natural state will fall briefly and slightly below a pH of 6; however, its acidity will not exceed its alkalinity. The additional test is currently used by the Pennsylvania Department of Environmental Resources to identify acid drainage.

Acid-forming material. No comments were received on this definition, and it is unchanged from the proposed regulations. The basis for the definition is knowledge of the process of acid production from mineral materials. Caruccio, F. T., and Parizek, 1968, An Evaluation of Factors Affecting Acid Mine Drainage Production and the Ground-Water Interactions in Selected Areas of Western Pennsylvania, in Second Symposium on Coal Mine Drainage Research, Mellon Institute,

Pittsburgh, Pa., Bituminous Coal Research Inc., Monroeville, Pa., preprint, pp. 107-151; Emrich and Merritt, 1969; Smith et al., 1978. The definition follows closely the concept of the definition for the term found in Grim, E. C., and Hill, R. D., 1974, Environmental Protection in Surface Mining of Coal, U.S. EPA Publication, "EPA670/2-74-093, p. 214".

Affected Area/Permit Area/Mine Plan Area/Adjacent Area/Disturbed Area

Introduction: These five terms are the key terms used throughout the permanent program regulations to distinguish among various areas of land and water, in a geographic or spatial sense, which are to be protected or regulated. Legal authority for defining these terms is Sections 102, 201, 501, 503, 504, 506, 507, 508, 509, 510, 511, 515, 516, 517, 519, 522, 523, and 701 of the Act.

As proposed, it was intended that "affected area," "permit area," "mine plan area," and "adjacent area" be defined and used upon one conceptual basis. "Affected area" was intended to be where surface coal mining and reclamation operations were conducted or located *at any time.* "Permit area" was intended to be where those operations were authorized under the permit to be conducted *within the term of the permit,* generally a maximum of five years. "Mine plan area" was intended to be where those operations were authorized to be conducted *throughout the entire life of the operations,* or the total of all permit areas for the operations. "Permit area" and "mine plan area" were, therefore, intended to represent temporal distinctions in the underlying spatial concept represented by "affected area." "Adjacent area" was intended to be the geographically separate area from the "affected area" which could receive impacts from the conduct of surface coal mining and reclamation operations in the "affected area." "Disturbed area" was intended to describe those areas where mining operations would remove topsoil, vegetation, or overburden and was defined principally to specify portions of the "affected area" needing special attention for protection of the hydrologic balance.

The Office received substantial comments on these terms, both with respect to the proposed definitions in Section 701.5 and the uses of these terms in the rest of the proposed rules, particularly in Subchapter G. In response to comments, the Office has made major modifications in the definitions of these terms found in the final rules at both Section 701.5 and in the way these terms are used in the rest of the final rules. However, no substantial changes were made in the basic concepts discussed above, as representing the Office's intention in proposing the definitions.

A. AFFECTED AREA

1. As proposed, this definition specified that it included resources "disturbed or utilized" within the permit area for surface mining activities. Ambiguity, however, was created by the proposed definition of "permit area," which covered all areas within the boundaries of the permit and the provision in the definition of the "mine plan areas," that "permit" and "affected areas" would always be the same. To ensure that no confusion exists in the application of the term "affected area," the final rule has been revised to specify that "affected area" is *any* area where surface coal mining activities are conducted or located.

2. For underground mining activities, the proposed rule created ambiguity by use of the term "affected during the term of the permit" and was criticized by commenters as being too subjective. In the final rules, this ambiguity has been eliminated, by specifying that the "affected area" is where underground mining activities are conducted or located at the surface and also is lands overlying underground mine workings.

3. Regarding lands overlying underground mine workings, the Office notes that many commenters objected to the inclusion of those areas within the definition of affected area. The commenters argued that surface areas where facilities are built or actual excavation occurs should be the only places regulated by the Act. The Office did not accept these comments, finding that Congress intended that the Act's Title V regulatory program protect surface areas overlying underground workings. This congressional intention is evident from the express provisions of Sections 516(b)(1) and 516(c) of the Act, protecting the use of surface lands from subsidence. Therefore, the Office decided to retain coverage of lands overlying underground mine workings in the definition of affected area, so that Subchapters G and K would clearly apply to those lands.

4. A commenter's objection that the definition of "affected area" should be limited to only those areas where overburden is removed or deposited was rejected, because the basis for the definition is the conduct or location of surface coal mining operations, which, as defined in Section 701(28) of the Act includes many other operations and activities.

B. PERMIT AREA

1. This definition was changed in the final rules to rely on only a spatial concept. The definition now includes the area designated on the approved permit application maps which must contain, at a minimum, all the "affected area" during the term of that permit. The approach in the proposed definition based on the concept of impacted resources was rejected.

Areas which will be "affected" (e.g. where surface coal mining and reclamations will be conducted or located) during the term of the permit must be included "at a minimum." This leaves to the discretion of the regulatory authority whether or not to include areas which will not be "affected" by the operation within the term of the permit. In response to comments, the language in the proposed definition which tied the definition of permit area to coverage by a performance bond was deleted, leaving that matter to be specifically addressed in Subchapter J of the final rules.

2. Several commenters recommended that the distinction between "permit area" and "mine plan area" be dropped, with "permit area" defined as "mine plan area" as now defined. The reasons for this proposal were assertedly to protect the operator's right to automatic permit renewal, rather than requiring operators to apply for a new permit every five years.

OSM rejected this suggestion, because under the Act the applicant ordinarily receives permission to mine and the right of successive renewal only for the geographic area which was subject to full review by the regulatory authority under the initial application. Sections 102(c)-(d), 506(d), and 510(b) of the Act. Since permits are ordinarily limited to a five-year term under Section 506(b) of the Act, the entire mine plan area is not scrutinized in the initial review in the same degree of detail as is the permit area. The permittee will not, therefore, have demonstrated to the regulatory authority in the initial application that reclamation of successive permit areas is feasible, as required by Section 506(d) of the Act before automatic permit renewal may be allowed.

Regarding these commenters' contentions that failure to provide for automatic renewal of the permit for the entire mine plan area will adversely affect the industry's ability to obtain development capital, the Office first notes that if a legitimate need for a long-life permit is shown, the Act (Section 506(b)) and regulations (30 CFR 786.25(a)) authorize an exception to the five-year limitation on the life of the permit. Moreover, the concerns of these commenters appeared to be contradicted by other industry commenters, who objected to requiring permit applications to cover the entire mine plan area as imposing undue front-end costs on the applicant. Thus, if the Office were to allow all permits to be automatically issued for the

entire life of the mine, the information requirements on a national basis for details of the entire mine plan area on the same scale as the permit area in the initial permit application (which the Office does not require) would apparently be too great for the industry, as a whole, to absorb.

3. Several commenters suggested that the language "whether or not the areas will be impacted by surface coal mining and reclamation operations" be deleted from the definition of "permit area" to allow release of the performance bonds on unaffected areas. OSM adopted this recommendation, leaving the question of whether bonding should be required for unaffected areas within the permit area largely to individual regulatory authorities under Subchapter J, because not all unaffected areas need to be covered by a bond.

4. One commenter recommended that the area included in the "permit area" be merely that area approved by the regulatory authority for inclusion in the permit area, deleting the language which indicates that the area of the map submitted by the applicant with its application must be included in the "permit area." This was rejected, because defining permit area as land designated on maps is expressly required by Sections 507(b)(13) and 701(17) of the Act.

5. Several commenters recommended that a distinction be drawn in the definition of "permit area" between surface and underground mining. They said underground mining involves an initial disturbance of the surface, with little additional disturbance during the life of the mine. They recommended that subsidence problems be dealt with in the performance standards, rather than in the definitions. OSM rejected this proposal, because underground mining can have continuing effects on the surface, as evidenced by Sections 516(b)(1) and (c) of the Act and as explained in the technical literature cited in the preamble to Sections 817.121–817.126 of the regulations. Because subsidence effects are regulated under both the permitting provisions of Subchapter G, the performance and design standards of Subchapter K, and the inspection and enforcement provisions of Subchapter L, the definition of permit area in Section 701.5 must include all surface areas over underground mine workings.

C. MINE PLAN AREA

1. The definition of this term was modified in the final rule to reflect more clearly the Office's intention that the term is to cover all "affected areas" for the entire life of the operations, so that it includes all of the individual permit areas for those operations. The definition retains the language of the proposed rule which explained the relationships of "affected," "adjacent," "permit" and "mine plan" areas, so that the reader of the regulation clearly understands the relationship between each of these terms.

2. Several commenters recommended that the phrase "life of the mine" in the proposed rules be deleted, because this requires regulation of a geographically larger area than the Act allows. These commenters also recommended that "permit area" always be used in place of "mine plan area" throughout the regulations. The principal commenter objected to the use of the term "mine plan area" in several of the informational requirements in the regulations on permit applications and reclamation plans. Commenters argued that Congress explicitly required information on an area larger than the permit area in several instances, and that where the Act does not contain such explicit language, information can be required only for the permit area itself.

Those arguments are not supported by the language of the Act, as discussed in greater detail below. In addition, the Act requires the regulatory authority to make its permitting decisions on whether the Act and regulations can be met based on complete and adequate information. (See Sections 507–510 of the Act.) Because of the interrelationship of different elements of the environment, adequate information must include data concerning resources outside of the immediate permit area.

(a). It should first be noted that the commenters' statements that Congress made a distinction in the Act between "permit area" and "mine plan area" are inaccurate. The phrase "mine plan area" is not explicitly used in the Act, but is a term defined by OSM to implement the Act. "Mine plan area" is used to enable the regulatory authority to insure that sufficient information is provided in an application so that a determination can be made as to a permit applicant's ability to comply with the Act and regulations.

(b). A cardinal rule of statutory construction is that ambiguous statutory language should be construed to serve the purposes of the statute, rather than to undermine the statute or make it inefficient. In *Re Surface Mining Regulation Litigation*, 456 F. Supp. 1301, 1323 N. 27 (D.D.C., 1978). Thus, unless the language of the Act clearly indicates otherwise, its provisions should be construed so that they further rather than defeat the Act's environmental purposes as reflected in Section 102 of the Act.

The language of the Act cited by the commenters, as supporting their argument for narrower informational requirements, is not clear, unambiguous language. They cited Sections 507(b)(11) and (12), and 508(a)(1) of the Act, as specifically requiring information concerning hydrology, climatology, and identification of lands subject to mining operations for areas larger than the permit area. The Office does not dispute this reading of those sections. However, the commenters went on to argue, that the Act, in Sections 507(b)(1), (9), (13), and (15), "specifies" that other information is required for the permit area only. This statement, like the statement that the Act distinguishes between "permit areas" and mine plan areas," is inaccurate.

Section 507(b)(1) requires that the permit application contain, "among other things," information concerning the persons having a legal interest in the property "to be mined." This phrase does not indicate whether it means property to be mined immediately under the the first permit for which the applicant is applying, or whether it includes property to be mined in the future (e.g. over the entire life of the mine). When an individual has a property interest in a larger coal-containing area around the permit area, it is reasonable to conclude that the "property to be mined" may include the entire mine plan area. This is especially true when this language is compared to the language of Section 508(a)(1), which the commenters described as "specifically" requiring information on a broader area; this Section refers to lands "subject" to mining and goes on to mention "subareas for which it is anticipated that individual permits for mining will be sought." The phrase, "lands subject to. . . mining" is no more specific than "property . . . to be mined." The commenters' arguments that this language creates a clear distinction between "mine plan area" and "permit area" is, therefore, unpersuasive.

A similar argument holds true for the "land to be affected" language found in Sections 507(b)(9) and (13) cited by the commenters. Clear evidence that "land to be affected" goes beyond the permit area is found in Section 507(b)(4) of the Act, which refers to "lands to be affected *including* the actual area to be mined" (emphasis added). Like "land to be mined," "land to be affected" is an ambiguous phrase in the Act that should not be taken to explicitly forbid the regulatory authority from requiring information concerning other areas within the cumulative areas permitted during the entire life of the mine.

Concededly, there are several sections of the statute which contain language which appears to focus more closely on the permit area. Section

507(b)(9) refers to the "area of land within the permit area" which the applicant has a right to mine. Section 507(b)(13) requires legal information concerning "areas abutting the permit area" and the location of buildings "... within one thousand feet of the permit area." Finally, Section 507(b)(15) requires information concerning the coal in the "permit area."

However, the commenters contention that this more limited language means that all other environmental resources information need only be provided for the permit area overstates the case. These sections do not specifically forbid the regulatory authority from requiring the information for the mine plan area. When read in the light of the rules for statutory construction discussed earlier, the language of sections 507(b)(1), 507(b)(4), 508(a)(1), 508(a)(14), and 510 of the Act, and the purposes of the Act, the Office does not construe the statutory language cited by commenters to forbid the regulatory authority from gathering information which is necessary in order to determine whether or not the operations described in the permit application will be able to meet the performance standards.

(c) The technical literature emphasizes that successful reclamation and reduction of adverse impacts from coal mining depends upon adequate information regarding the physical, chemical, and biologic conditions both on and off the mine site. Grim and Hill, *Environmental Protection in Surface Mining of Coal*, p. 17, (1974); Arthur H. Johnson, Jon Berger and Ian L. McHarg, *Landscape Analysis for Ecologically Sound Land Use Planning*, p. 2; USEPA, 1976, Erosion and Sediment Control, Vol. 1 at 74.

For example, blasting can cause widespread effects such as flyrock, which can land long distances from the explosion itself. Gustafsson, p. 86; Hearings on H.R. 2 before the Subcommittee on Energy and Environment of the House Committee on Interior and Insular Affairs, 95th Cong., 1st Sess. Part II, p. 313 (1977). Blasting can also cause ground vibrations and air blast damage at substantial distances from the mine site, as is recognized in Section 515(b)(15)(E) of the Act, which requires preblasting surveys where requested by individuals residing within one-half mile of the permit area, as well as in the technical literature. Gustafsson, p. 217.

Another example of the far-reaching effects of surface mining is fugitive dust emissions, which can pollute the air in an area much larger than the permit area. Francis X. Murray, *Where We Agree—Report of the National Coal Policy Project* (1978), Vol. 2, p. 206; U.S. Environmental Protection Agency, *Survey of Fugitive Dust from Coal Mines* (1978), EPA 908/1-78-003, p. 1; ERT Doc. No. P-3549 *Assessment of Particulate Matter Impacts Associated with Strip Mining Activities: Fugitive Dust and the Proposed Surface Coal Mining Regulation* (1978), p. 4-1. Surface mining can also have widespread effects on fish and wildlife, primarily because of its effects on their habitat. *An Environmental Guide to Western Surface Mining Part II: Impact, Mitigation and Monitoring*, FWS/OBS 78/05, pp. III-104-139; *Methods for the Assessment and Prediction of Mineral Mining Impacts on Aquatic Communities: A Review and Analysis*, FWS/ OBS-78/30 (1978), pp. 5, 15. (*See also*, preamble discussion to Section 816.97).

(d) The legislative history of the Act also reveals the need for the regulatory scheme under Title V of the Act to be adequate to protect lands and waters outside the immediate permit area. Congress intended that the information required in the permit system be thorough and complete, so that the regulatory agency can make an informed decision on whether an applicant will be able to meet the performance standards and reclamation requirements of the Act. Congress was clearly aware that adequate data is crucial to intelligent decisionmaking about environmental matters:

> In any coal surface mining regulatory system, the determination that reclamation can or cannot be accomplished in an area proposed to be mined depends initially upon the judgment of the regulatory agency. Experience has shown that without a thorough and comprehensive analysis both by the agency and by other affected parties, based upon adequate data, this judgment is apt to reflect the economic interest in expanding a State's mining industry. Valid environmental factors tend to receive short shrift. H.R. Rep. No. 95-218, 95th cong. 1st Sess. 91 (1977).

As the House Report indicates, Congress intended permit applicants to submit information for areas outside the permit area itself:

> The physical parameters of the mining site *and its environs* must be clearly set forth in the application, so as to yield an accurate picture of the geologic, hydrologic, surficial, developmental, ecological and general land use features of the landscape which will be affected directly or indirectly by the operator. H.R. Rep. No. 95-218, 95th Cong., 1st Sess. 91 (1977). (*Emphasis added*)

Thus, the legislative history indicates that decisions about cumulative impacts of mining in an area must be made, that they must be based on adequate data, including areas outside the immediate permit area, and that applicants are to be the source of the data. Therefore, the Act's permit application requirements should not be construed in such a way as to undermine these purposes.

(e) The need for adequate information on wide areas is especially clear, when one considers the nature of environmental decision-making. The regulatory authority will be unable to assess the environmental effects of proposed mining, if it has the information only for the mine site itself. Environmental effects cannot be assessed for discrete units of land; these effects spill over property lines and similar artificial boundaries, as discussed above. A recognition of the interrelationship of natural ecological systems lies at the heart of the Act. See Sections 101(c) and (d) and 102 of the Act. The effects of consecutive permit renewals may be far greater than the sum of the effects of each individual permit, and blindness to large, catastrophic cumulative effects could be the source of the damages which the Act is intended to prevent.

(f) The commenters' arguments appeared to utilize the legal principle that "expression of one thing is the exclusion of another." They argue that, because Congress, in several instances, explicitly required information for an area larger than the permit area, the failure in the Act to require such information explicitly should be taken as forbidding such a requirement. There are several flaws in that reasoning.

The commenters' principle is merely a tool to aid in construing statutory language and should not be used to thwart a statute's purpose. Legislative intent overrides other considerations in construing a statute, and the commenters' principle is increasingly disfavored by modern courts. *National Petroleum Refiners Ass'n v. FTC*, 482 F.2d 672 (D.C. Cir. 1973), *cert den.*, 415 U.S. 951. Furthermore, the principle should not be applied in cases where something was expressly mentioned only because of caution and not to exclude other things. Thus, Congress mentioned that the regulatory authority may require information concerning hydrology, climatology and identification of lands subject to mining in areas broader than the permit area, because it was especially aware of the need for this information and not because it considered it unimportant to have broad information on other subjects. H.R. Rep. No. 95-218, *supra* at 91.

Moreover, the regulations complained of do not rest solely on Sections 507(b)(1), (9), (13), and (15) of the Act. Section 508(a)(14) states that the reclamation plan, which is submitted as part of the permit application under Section 507(d), shall contain "such other requirements as the regulatory authority shall prescribe by regulations." Many sections of the regulations rely on Section 508(a)(14) of the Act as authority. Sections 779.24(a)

and (b) rely on the "land to be affected" language of Section 507(b)(9) of the Act, and Sections 779.24(d)(3) and (h) rely on the same phrase in Section 507(b)(13) of the Act.

3. One commenter recommended that the definition of "mine plan area" be revised to take into account the problem of operators who have several mines within the same general vicinity and who need to know whether these mines must be considered together for regulatory purposes. This commenter suggested that the revised definition of "mine plan area" utilize the concept of a "logical mining unit," as in the Federal Coal Leasing Amendments Act of 1975, 30 U.S.C. Section 181 *et seq.* The commenter also believed that this change would aid in coordination between the Act and the Coal Leasing Amendments.

OSM rejected this comment, because the Act and the Coal Leasing Amendments are already coordinated in particular regulations applicable to mining on Federal lands. 30 CFR Parts 211, 740–745, and 769. Extension of the use of the "Logical mining unit" (LMU) concept to private lands is inappropriate, because (1) LMU is a developmental and economical concept relevant to planning on very large areas, and (2) non-Federal holdings are generally too small to make such a concept useful.

4. One commenter recommended that the definition of "mine plan area" include a definition of "sub-area" in order to clarify its meaning. OSM rejected this comment as unnecessary; use of the term "sub-areas" in Subchapter G clearly refers to individual permit areas.

D. ADJACENT AREA

(1) This definition was changed in the final rule to abandon the distinction between permit applications and the actual conduct of surface mining and reclamation. The final definition also deletes the special concepts of "near" and "contiguous", to focus, instead, on protected resources which may be impacted. The phrase "affected area, permit area, or mine plan area, depending on the context in which *adjacent area* is used" was added, instead of addressing only "mine plan area," to more clearly reflect the Office's intention that lands outside any of these areas are potentially "adjacent area" depending on the particular context in which they are used.

(2) A number of commenters recommended that "adjacent area" be limited to 2,000 feet or 1/2 mile from the mine plan area or to locations which are contiguous to permit areas, so that permittees would not be held responsible for damages at long distances from the mine site. OSM rejected these suggestions, because the Act does not authorize such limitations. The Act broadly requires protection of the environment, as discussed above in relation to the comments on the definition of "mine plan area."

(3) Another commenter recommended that "near" be replaced by "are in the vicinity of," because "near" allegedly connotes spatial closeness "without regard to the watershed boundaries and environmental variations including such parameters as wind-speed and direction." Neither "near" nor "in the vicinity of," are used in the final definition, because the definition was changed to rely only on adverse impacts on protected resources, rather than on a particular spatial concept.

(4) A number of commenters recommended that the phrase "determined on a site-by-site basis by the regulatory authority" be added after "near a mine plan area" in order to clarify the use of "near." It was not necessary to adopt this recommendation, as the definition was changed to delete the spatial concept of "near." Moreover, the Act places primary responsibility on the industry, not the regulatory authority, to avoid adverse environmental effects. Obviously, the precise scope of data collection must, to some extent, be determined on a practical basis, worked out between the applicant and the regulatory authority.

(5) A number of commenters objected to defining "adjacent area," in relationship to the "mine plan" area, suggesting that "adjacent area" should be limited in application to relationship to the "permit area" only. OSM rejected the idea that the area of concern at any given time should be measured only from the permit area. Certain information is needed for the entire area to be mined during the life of the operation because the Act requires that the regulatory authority evaluate impacts on water, fish, and wildlife on a cumulative, long-term basis. Therefore, the regulatory authority must determine, in reasonable detail, whether the entire mining plan area should be mined in the review of the initial permit application. Furthermore, during the life of the mine, the permittee is responsible for adverse offsite (e.g., mine plan) impacts that occur prior to bond release, even if it is no longer actively working the particular permit area involved.

(6) Several commenters recommended that the definition of "adjacent area" be expanded to include land impacted by mine-mouth facilities and railroad loops or spurs specifically serving mining facilities. OSM believes that the definitions of "adjacent area," "permit area" and "affected area," through references to the term "surface coal mining and reclamation operations" already cover all of the effects incidental to mining operations. See Section 701(27) of the Act. Therefore, it was unnecessary to specify the facilities identified by the commenter in the definition of "adjacent area."

(7) One commenter stated that the definition of "adjacent area" expands OSM's authority without a statutory basis. This commenter recommended that either this definition be deleted or that it be limited to include only areas the operator intends to mine in the immediate future. OSM rejected these proposals, because the Act clearly envisions regulation of impacts outside the immediate permit area, as discussed above in relation to the comments of the definition of "mine plan area." See also Sections 515(b)(2), 515(b)(10), 515(b)(12), 515(b)(15), 515(b)(21) of the Act.

(8) One commenter recommended that the language "or which are affected by surface coal mining operations within a permit area" be deleted because "the manner in which adjacent area is used throughout most of the draft regulations does not include permitted areas." OSM rejected this suggestion, because the term "permit area" is included within the term "mine plan area" for operative purposes of the permit, bonding, and performance standard regulations.

(9) One commenter recommended that only "significant" impacts be covered. OSM rejected this suggestion, because it expects that the regulation will be applied reasonably without expressly specifying the word "significantly." OSM also wished to avoid creating a misimpression that apparently small environmental impacts should not be considered in determining the "adjacent area", even though such impacts might have larger implications for the environment as a whole.

(10) One commenter recommended that "may be impacted" be replaced by "reasonably could be expected to be impacted." OSM rejected this suggestion, because the Act generally establishes a standard for strict liability for the industry. A strict liability standard is not based on concepts of negligence as reflected in a "reasonable person" standard. The enforcement provisions of the Act are based on the enforcement provisions of the Federal Coal Mine Health and Safety Act of 1969. S. Rep. No. 95–128, 95th Cong., 1st Sess. (1977). Under the OMHSA, negligence or lack of negligence is irrelevant to liability and may only be considered in setting the amount of the penalty. See, e.g., *Valley Camp Coal Co.*, 1 IBMA 196, 200–201 (1972).

F. DISTURBED AREA

(1) One commenter stated that the definition of "disturbed area" was too narrow and suggested a new definition which would include all areas of over-

burden removal or deposit, all land overlaying excavations, land affected by construction of railroad loops, roads, or utility right-of-way, access and haul roads, mine-associated facilities, waste disposal areas, treatment ponds, and other surface or subsurface disturbance associated with coal mining. OSM accepted this suggestion, insofar as it concerned the inclusion of areas upon which topsoil, spoil, waste, and refuse have been placed.

Topsoil, spoil, coal processing waste, underground development waste, and noncoal waste disposal areas are all sources of water pollution and other environmental damages required to be regulated under the Act. Sections 507(b)(14), 515(b) (3), (4), (5), (8), (10), (11), (13), (14), (17), (21), and (22) of the Act. OSM did not find it necessary to add the other items suggested by the commenter to the definition of "disturbed area," because they are already included in the definition of "affected area."

(2) Another commenter asked whether the definition of "disturbed area" would include power stations or fans. These facilities are already covered by the term "affected area," as they would be within the terms of the definition of surface coal mining operations under Section 701(27) of the Act and 30 CFR 700.5.

(3) Finally, a commenter suggested that this definition should read "an area where vegetation, topsoil, or overburden has been removed by surface coal mining operations and where reclamation is not complete and the bond not released." This was identified as a grammatical change. OSM rejected this suggestion because it omits the "or other evidence required by Subchapter J of this Chapter" language, which is necessary because performance bonds are not required in every instance.

G. A number of commenters objected to the references to "natural and human resources" in the definitions of "permit area," "mine plan area," "adjacent area," and "affected area." Their objections to this phrase were that the word "human" is ambiguous, that "human" resources are already protected under Section 522(3)(5) of the Act as implemented by Sections 761.11 (e) and (f) of the proposed regulations, and that the phrase "natural and human resources" is at variance with the commonly understood meaning of "areas." Several commenters suggested that "man-made resources" be substituted for "human resources" because the latter phrase allegedly suggests intangible qualities rather than concrete structures.

OSM deleted the phrase "natural and human resources" from the definitions of "permit area," "mine plan area," and "affected area," because in defining these areas in spatial terms, there is no need to discuss expressly what resources are in those areas. However, the phrase "air, surface or groundwater, fish and wildlife, vegetation, or other resources protected by the Act" is included in the definition of "adjacent area," because this definition needs to be based on the resources which may be impacted by mining and reclamation operations, rather than on a spatial concept.

Agricultural Activities

1. This term is defined because it is used in several important provisions of the regulations. *See* Sections 785.19(c)(1)(ii); 785.19(c)(2)(ii); 785.19(d)(2)(vi); 785.19(d)(3)(iv)(A); 785.19(e)(2). The basis of this definition was generally explained at 43 FR 41668 (Sept. 18, 1978). *See e.g., Webster's New Collegiate Dictionary,* at 24 (1977 ed).

2. Commenters recommended changing the phrase in the definition *"associated with* alluvial valley floors" to *"in* alluvial valley floors." (emphasis added) The suggested change apparently results from a misunderstanding of the definition; the commenter felt the phrase implied extension of alluvial valley floor designations outside of the actual boundary of the alluvial floors. That is not the Office's intention. Consideration of whether a particular valley floor supplies water for agricultural activities involves examination of whether water availability is sufficient to support agricultural activities. Since the Office could not anticipate all the relationships between the water supply of a valley floor and the agricultural activities it would support, the definition was written so as not to foreclose the possibility that the agricultural activities supported by water made available from the alluvial valley floor did not occur directly on the alluvial valley floor. Therefore, use of the term "associated with" is entirely appropriate. However, the actual location of alluvial valley floors is confined to areas which meet the geologic, landform and hydrologic criteria for identifying alluvial valley floors.

3. Commenters wanted to delete the grazing and watering of livestock from the definition, claiming it is an expansion of Congressional intent to protect only farming in alluvial valley floor areas. The argument was rejected, because it is clear that grazing and watering of livestock are activities included, according to Congressional intent (Section 510(b)(5) of the Act), that "these valley floors . . . are important for natural irrigation and subirrigation of crops and grazing lands . . ." (*Cong. Rec.* H-8081), (May 19, 1977). *See* H.R. Rep. No. 95-218, 95th Cong. 1st Sess. of 116 (1977). Moreover, the commonly accepted definition of "agriculture" includes the raising of livestock (*Websters New Collegiate Dictionary* (1977, p. 24)).

4. One commenter wanted to replace the phrase "enhance or facilitate" with "made possible by." This ignores the fact that irrigation is always supplemental to "normal water availability." "Normal water availability" will support vegetation on valley floors to the same degree as an upland area. However, it is the supplemental water supplied by flood irrigation or subirrigation that allows alluvial valley floors to be especially productive. (See Hardaway, J. E., Kimball, D. B., Lindsay, S. F., Schmidt, J., Erickson, L., March 1977. Sub-irrigated Alluvial Valley Floors; a Reconnaissance of their Properties and Occurrences on Coal Resource Lands in the Interior Western United States (U.S. EPA, Region VIII, Denver, Colo.); Proceedings of National Coal Association and Bituminous Coal Research Symposium in Oct. 1977, pp. 61-135). Further, the use of the term "made possible by" is not technically correct, in that there are many alluvial valley floors that during a given year or early in the year may provide no moisture to plants via flood irrigation or sub-irrigation, but where the initial growth of plants will be "made possible" by near surface soil moisture supplied directly from rain or snow melt. Later in the season, water from sub-irrigation will eventually be supplied to the maturing plants as they extend their root system down to the available water. (See Hardaway, J. E., Kimball, D. B., Lindsay, S. F., Schmidt, J., Erickson, L. March 1977. Subirrigated Alluvial Valley Floors; A Reconnaissance of Their Properties and Occurrence on Coal Resource Lands in the Interior Western United States (U.S. EPA, Region VIII, Denver, Colo.); (Proceedings of National Coal Association and Bituminous Coal Research Symposium in Oct. 1977, pp. 61-135). For these reasons, the comment was not accepted.

5. One commenter suggested that a general quantitative "floor" be established in this definition. However, there was nothing offered in the comment to suggest that a quantitative "floor" would be in terms of water availability, land acreage, or agricultural production. Moreover, assuming the commenter intended to quantify "farming" within the context of the Act's prohibition against mining, the Act (Section 510(b)(5)(A)) implies that the quantity at which agricultural activities are to be deemed significant for the purposes of identifying alluvial valley floors where mining must be prohibited is to be made on a case-by-case basis. That Section exempts areas which are ". . . of such small acreage

as to be *of negligible impact on the farm's* production." (emphasis supplied). Thus, specification of a generally applicable quantitative yardstick in the definition was believed inappropriate.

6. (a) One commenter felt that the term "farming" should be specifically defined in Section 701.5, the same as "agricultural activities," but pertaining to alluvial valley floors only. As the only use of the term "farming" in the regulations is with respect to the finding required by Section 510(b)(5)(A) of the Act and only relative to alluvial valley floors, it was not considered necessary to define the term, especially in view of the use of the term "agricultural activities" in Section 785.19(e)(2) in a manner so as to equate this defined term with the word "farming" as used in Section 519(b)(5)(A).

(b) One other commenter recommended that a definition of "farming" be included that defines "farming" as economically viable agricultural activities. As the term "farming" only occurs relative to alluvial valley floors, such a definition would circumvent the intent of Sections 510(b)(5) and 515(b)(10)(F) of the Act and 30 CFR 785.19 which implements the Act's mandate that surface coal mining and reclamation operations will not preclude farming on alluvial valley floors; therefore, the comment was rejected.

Agricultural use. 1. This definition is used to clarify the agricultural uses permitted under the mountaintop removal variance in Sections 785.14 and 824 of the regulations. The reader is referred to the land use definitions (Section 701.5) for a more detailed breakdown of agricultural land uses. Included under the definition of agricultural use are: cropland, pastureland, land occasionally cut for hay, and grazingland.

2. Several commenters suggested that the definition of agricultural use was too broad and did not distinguish agricultural production from natural production of animal or vegetable life. The commenters suggested amending the definition to emphasize the management aspects of the term. This definition of agricultural use includes all forms of agricultural management activities that result in the cultivation of the soil, production of crops or the raising of livestock. The suggestion to revise this definition has been rejected because the Office believes that the definition needs to be sufficiently broad to include a wide variety of agricultural land uses, including those with limited management requirements. A few commenters suggested deleting the phrase "watering of livestock" from the definition. This comment was rejected because this is an acceptable agricultural practice in the West. Furthermore, disruption of watering facilities by surface mining and reclamation operations could be very critical to local ranching operations. Therefore, no change was made to the proposed regulations in response to this comment.

Alluvial valley floors. 1. This important term represents one of the key items to be protected under the permanent regulatory program. Alluvial valley floors are regulated principally through Section 785.19 (permitting) and Part 822 (performance standards).

2. Several comments were received suggesting changes to the definition of alluvial valley floors. The comments ranged from adding language to insure that alluvial valley floor regulations are only applicable west of the 100th Meridian, inserting the phrase "economically viable agricultural unit," changing various words to help clarify the definition, to changing the definition to emphasize hydrologic processes. The comments were rejected as the definition in the regulation was derived directly from Section 701(1) of the Act, and operations east of the 100th Meridian are excluded from alluvial valley floor standards by the Office's interpretation of Section 510(b)(5) of the Act, as expressed in the definition of *arid* or *semi-arid area* in Section 701.5.

Applicant. A commenter felt that the definition of applicant should be amended to clarify that the applicant may be one who is filing for a permit under a cooperative agreement. The definition was not changed because cooperative agreements are a part of Federal Lands programs and therefore are covered by the existing definition. See 30 CFR Parts 741 and 745.

Approximate original contour. A commenter suggested deleting the phrase "closely resemble" from the definition. This suggestion was rejected as it would cause the definition to be in direct conflict with Section 701(2) of the Act.

Aquifer. 1. This term is defined because it is used throughout the Chapter, in areas concerning protection of the hydrologic balance. A number of comments were received regarding the definition of *aquifer.*

2. A commenter felt that the proposed definition should be expanded to specifically mention perched water tables. The definition is sufficiently broad to include perched water tables, if they meet the test in the definition of being able to "store and transmit water in sufficient quantities for a specific use." Perched water tables that do not meet this test are not included, because the Act does not necessarily require their protection.

3. A few commenters objected that the definition was so broad as to include potential aquifers. The definition has not been changed, because the Act requires protection of all aspects of the prevailing hydrologic balance. One commenter cited the sample of Dakota Sandstone, stating that while it meets OSM's definition of aquifer, it is dry in outcrop areas. However, the Dakota Sandstone is an important aquifer in many parts of the West, and usually the greatest area of inflow into aquifers is in the outcrop areas. (Chow, V. T., 1964, McGraw-Hill, pp. 4-5, 4-17.) Because of this characteristic, the Office did not modify the definition.

4. Several commenters felt that the definition of aquifer should have an economic basis. Some of the commenters felt that the definition in the Glossary of Geology by the American Geological Institute (pg. 34) was satisfactory, while another commenter felt that economic or ecological value should be a criterion. The Congressional mandate goes beyond narrowly protecting an immediate system in which people may have wells; the definition of aquifer is tied to preservation of the hydrologic balance.

A well-protected stream in a mined-out watershed is of no value, if the aquifer which supplies the stream is destroyed, or if the quality of water is degraded so as to render it useless. Protection needs to be extended to seemingly marginal systems typically described as perched or semi-perched, as they are important keys to a well-buffered hydrologic system.

The definition of aquifer was, therefore, retained as proposed, because many low water-yield formations or ground water tables are tributary to larger systems which are considered very important. (Chow, V. T., 1964, supra, pp. 4-3 to 6, 4-23, 13-3, 13-34). If there is a reasonable likelihood that such a strata has served in the past, or will in the reasonable future serve to transmit sufficient quantities of water, then it will be considered as an aquifer and treated accordingly. Any other interpretation of the Act and regulations would subvert Congress' clear intent to rigorously protect the water resources in coal mining areas.

Arid and semiarid area. 1. One commenter felt that the definition of "arid and semiarid area" should be changed to mean those areas of 26 inches or less of precipitation. While the generally accepted definition of semiarid is less than 26 inches, it is administratively difficult to work with a dynamic line on a map, versus the current 100th meridian. The proposed definition was chosen over the 26 inches criterion because it focuses on whether alluvial valley floors provide water during periods of stress caused by low precipitation and high evapotranspiration rates.

2. A few commenters essentially recommended that all or parts of three western states be eliminated from the alluvial valley floor provisions of the regulations. In the case of North Dakota, the high potential to find glaciated valleys with little agricultural utility was noted. In the States of Alaska and Washington, climatological differences were cited as reasons for excluding the areas from the definition. But in no case was a quantitative demonstration made that alluvial valley floors did not exist. It, therefore, is not yet possible for OSM to eliminate these areas from the requirements pertaining to alluvial valley floors. State or Federal program submissions under Subchapter C are an appropriate vehicle to provide demonstrations of nonapplicability of the alluvial valley floor provisions of the Act, as well as the vehicle to assess other regional differences.

3. In the case of Alaska, Section 708 of the Act directed the Secretary to conduct an in-depth study of surface coal mining conditions in the State of Alaska in order to determine which, if any, of the provisions of this Act should be modified. The study results are to be reported to Congress. The National Academy of Sciences has been commissioned to perform the study. It is premature for OSM to modify the alluvial valley floor regulations for Alaska until the study is complete. No special physical, hydrological or climatic conditions have been identified as yet that would suggest an exclusion for Alaska pursuant to Section 708(3) of the Act.

Auger mining. No substantive comments were received on this term. A minor editorial change was made for clarity; "laterally" was deleted because it was not precisely accurate and also was unnecessary for the purpose of the definition. This definition follows closely the definition in Grim, E. C. and Hill, R. D., 1974, Environmental Protection in Surface Mining of Coal, EPA-670/2-74-093, pg. 215.

Augment. One commenter submitted a proposal to define "augment" for the purposes of regrading, reseeding and maintenance practices, which would require such practices to be initiated only if 25 percent or more of the original permit area needed such work. The suggested definition would allow the five-year time period prior to bond release to start so long as no more than 25 percent of the original permit area needed regrading or reseeding. The proposal was rejected as it could result in lands reaching bond release time with partial failure of the vegetation. Also, there was no justification for the proposed 25 percent cutoff.

Best technology currently available. 1. Numerous comments were received regarding the definition of "best technology currently available (BTCA)." Commenters felt that technology "not in routine use" should be stricken from the definition. The suggestion was rejected because striking this concept would shift emphasis toward only requiring the adaption of techniques and equipment which are currently widely used and would slow the transfer and improvement in technology through the Act. Other commenters felt the definition should include the concept of "economic feasibility" and account for "energy and other costs." A review of the legislative history related to BTCA indicates that economic feasibility was not at issue or considered as a criterion for BTCA, therefore the comments were not accepted. Other commenters question whether BTCA should include worldwide technology, technology within the U.S., or from within a particular region. Given the interchangeability of technology worldwide, especially at this fairly rudimentary level, it is considered feasible and appropriate to require consideration of technology on a worldwide basis.

2. Commenters questioned whether the definition should include straw bales, rip-rap, etc. in addition to sediment ponds. It was not felt necessary to include a list of practices within the definition; it is generally understood that BTCA includes a variety or combination of different approaches. Furthermore, a list may be construed by some as limiting BTCA. Sediment ponds were specifically mentioned to highlight what OSM believes would definitely be included in BTCA. Another commenter suggested that the reference to the initial program in BTCA be stricken. The comment was accepted as the BTCA definition is applicable to the permanent program only and is currently not dealt with in the interim regulations.

3. One commenter suggested a variance provision be included in the definitions similar to the variance provisions to EPA effluent limitations. The comment was rejected because there was not adequate justifications for its inclusion. OSM also has the authority to fill in gaps of other Federal and State laws to provide a comprehensive regulatory scheme; this approach was upheld during litigation of the initial program. In Re Surface Mining Litigation 456 F. Supp. 1301 (1978).

4. Comments recommended the phrase "achieve enhancement of such fish and wildlife resources where practicable" should be deleted from the definition. These comments are also rejected as the language is a statutory mandate taken from Section 515(b)(24) of the Act. Comments also were submitted suggesting that the phrase "but in no event shall such technology result in contributions of suspended solids in excess of requirements set by applicable State or Federal laws," be stricken from the definition. The comments are rejected as the phrase is taken from Section 515(b)(10)(B)(i) of the Act, and as such is a legal requirement of operators. Some commenters felt that the definitions should include the concept that the technology must have been demonstrated to achieve the required result before it would be required for use. The comments were rejected as such an addition could restrict the use of new technologies or the transfer of other existing technologies.

5. Comments were received regarding the division of responsibility for determining best technology currently available. The definition allows the State regulatory authority to determine BTCA within the constraints of the Offices' permanent regulatory program regulations and the Act. For example, under the permanent program standards, sediment ponds accompanied by other control measures have been determined to be BTCA. With this definition of BTCA, the regulatory authority must require sediment ponds but can select from a mix of other sediment control measures to assure that effluent limitations are achieved.

6. Commenters questioned the "technology forcing" aspect of the definition. The final regulations preserve this aspect of the definition. Under Sections 515(b)(10)(i) and 516(b)(9)(B), surface and underground coal mining operations are to be conducted to the extent possible using the "best technology currently available" ("BTCA") to prevent additional contributions of suspended solids to streamflow or runoff outside the permit area, but in no event may contributions be in excess of requirements set by applicable state or Federal law.

Thus, BTCA must at least meet applicable water quality standards. To this extent, technology is forced to develop rather than setting standards from the standpoint of current mining practice.

This aspect of BTCA is well grounded in legislative history. In discussing best technology currently available, the House Committee on Interior and Insular Affairs stated:

> One example of the best available technology for sediment control, which is applicable throughout the United Stated and can be used on a mine-by-mine or a multiple-mine basis, is that technology employed at the surface coal mine of the Washington Irrigation and Development Company. This mine is located in the Hanaford Green drainage, south of Centralia, Washington. The general geographic characteristics of this area are common to other coal areas. In this instance, in order to meet year-round water quality standards for migrating fish,

the company designed a relatively inexpensive method of settling virtually all of the sediment in the surface runoff from the mining operation. Several sets of double siltation entrapment ponds were constructed on the small tributaries leaving the mine property. Elimination of sediment loads is achieved through a two-stage process, with the initial gravity settling occurring in the first pond and the introduction of a biologically inert flocculating compound into the flow between ponds. This results in a discharge that contains even less silt than the normal background flow. . . . H.R. 95-218, 114, 115 (1977).

Further, Congress intended that such innovative technology be transferred to other coal fields. In this regard, the Committee added:

This technology sets a standard for the industry and is representative of the innovation the mining industry can achieve when required to meet specific water standards as a precondition to operation. It should be noted that this approach is applicable not only in area-type mining situations but also in the mountain mining operations in the Appalachian coal fields, where such facilities might serve more than one specific mine site in a small drainage area. H.R. 95-218, 115 (1977).

Moreover, the Committee stressed that achieving water quality standards must be the guiding principle under the Act. To remove any doubt with respect to whether water quality standards should yield to other considerations, the Committee said:

The bill requires that the standard for siltation control should be the best available technology in recognition that the application of such technology might well increase present siltation control costs of some mine operations. However, the Committee rejected the notion that the standards should be adjusted to what individual mine operators state they can or cannot afford. The Committee's action requires the adjustment of operation to the environmental protection standards rather than the opposite. H.R. 95-218, 115 (1977).

The "technology forcing" aspect of the standard also found support in the Senate. Speaking with respect to the scope of EPA concurrence, Senator Muskie said:

The best technology available ought to be used to control pollution. My only point in discussing this measure is that it should not be viewed as the final possible requirement. It is entirely possible, under the Federal Water Pollution Control Act, that even with the use of the best available technology, the discharge from the mining activity might be such that the mining activity could not be done in compliance with that Act. In that case, even the best available technology would not be sufficient to allow the mining to go forward. 121 Cong. Rec. 6201 (Mar. 12, 1975).

Thus, Congress intended that surface coal mining and reclamation operation should not proceed unless all applicable water quality standards are achieved and maintained. The "technology forcing" aspect of this definition of BTCA is necessary to promote the development, transfer and application technology to assure compliance with such standards and allow surface coal mining and reclamation operations to proceed.

Coal exploration. The definition of the terms "coal exploration" and "substantially disturb" are similar to the definitions proposed on September 18, 1978 (43 F.R. 41804 and 41807). The discussion of those proposed definitions appearing in 43 F.R. 41669 (September 18, 1978) includes a discussion of the basis, purpose and alternatives considered for those definitions, and that discussion is hereby incorporated by reference.

2. The only substantive change in the definition of "coal exploration" from the proposed rules is to limit the scope of the definition to field activities. OSM believes that non-field activities were not intended to be deemed exploration by Congress, as shown by the activities listed and emphasis placed on reclamation standards in Section 512(a)(2) of the Act. The change in the definition was made in response to several comments which correctly pointed out that the proposed definition was too broad, in that it included activities in laboratories or other sites physically unrelated to the coal site.

3. Several commenters felt the definition should be further narrowed. One group of commenters suggested deletion of clause (b) of the definition of "coal exploration." However, OSM believes that pre-permit data gathering poses as significant a risk to the environment as do disturbances intended to locate and evaluate the coal resource. Also, clause (b) is broad enough to include data gathering done to determine the suitability of land for mining under Subchapter F. The activities listed in Section 512(a)(2) of the Act occur equally in the two phases of pre-mining exploratory activity, and the other data gathering contemplated by the Act. The regulatory authority must have authority over all such activity to achieve the environmental protection purposes of the Act, especially since the data gathering activities will occur because of requirements of the Act.

4. Several commenters requested that core drilling be excluded from the definition of "coal exploration" on the grounds that it is of short duration, has limited effect on the environment and the cost of compliance for core drilling would be out of proportion to the benefits. Another group of comments suggested that the phrase "drilling or altering coal or water exploratory holes or wells" be deleted from the definition for "substantially disturb." OSM has not accepted these suggestions, since "drill holes" are specifically required to be regulated under 512(a)(2) of the Act. Also, OSM has not seen any data to indicate that drilling is a low-risk activity as those commenters implied. In fact, a commenter indicated that although only 5 cubic feet of strata may be removed in diamond, core drilling, for each 500 feet of depth, an area also must be disturbed for the drill truck and a sediment pond is necessary, at least when conducting wet drilling. The hydrologic protection emphasized by the Act mandates that precautions be taken in connection with all drilling and alteration of existing holes. (See Sections 515(b)(10), 516(b)(9) and 717 of the Act.)

5. Several commenters suggested that the definition of "coal exploration" be limited by its terms to the area outside a permit area 30 CFR 741-745 require that exploration activities within a permit area on Federal lands be regulated according to the provisions of the Act rather than the Federal Coal Leasing Amendments Act of 1975 and the reader is referred to the preamble discussion for § 744.11 for further information. The suggestion has not been adopted by OSM for non-Federal lands. The reader is referred to the discussion of Parts 776 and 815 for an explanation of how the coal exploration regulations apply within a permit area and the reasons why the Office did not exempt exploration within the permit area from the performance standards. The notification and approval requirements of Part 776 do not apply to areas under permit to the explorer.

6. Many of the comments pointed out that some activities included within the definition of "coal exploration," such as aerial mapping, present no environmental risk and should not be regulated. In fact, the regulatory scheme enacted in these regulations only applies information requirements and performance standards to exploration on the ground which could cause environmental damage. (See Sections 776.1 and 815.1). Changes in the regulations to limit this definition to field activities were made, in part, in response to these comments.

7. Several minor, non-substantive changes were made for clarification. In "coal exploration," the two types of activities were separated into separate paragraphs and separated by the word "or," rather than "and," to eliminate possible ambiguity or a construction narrower than that intended by OSM. The last word was changed to "Chapter" to make it clear that the definition applied to OSM's entire regulatory program. In the definition of "substantially disturb" the words "of land" were deleted after "excavation" because they were superfluous and might possibly have been interpreted

to exclude excavations in non-solid strata or in rock, which was not intended.

8. Several commenters supported the definition of "substantially disturb" as written in the proposed regulations. These commenters asserted that the term should not be related to any specified minimum acreage or holes drilled since exploration activities can have a major impact upon the environment. Other commenters requested that the definition be amended so that the State regulatory authority would have the responsibility for determining which coal exploration activities have "significant impact." The rationale for this suggested amendment is that since coal exploration activities vary considerably in different parts of the country, it is appropriate for the State regulatory authority to have the discretion to determine which coal exploration activities would require reclamation or management efforts since not all coal exploration activities will cause substantial disturbance to the land. Some commenters requested that the definition of "substantially disturb" should include a limit on the amount of time the land can be disturbed, since long disturbances interfere with the vegetative cover of the area to such an extent that wildlife habitat is decreased or crop production is interrupted. Other commenters requested exemptions for "reconnaissance" drilling, any exploration that does not require the use of heavy earthmoving equipment, all drilling holes, wells, temporary structures, "insignificant" amounts of excavated earth, and drill holes less than 5.0 inches in diameter. Some commenters wanted the definition to exclude impacts to air and/or water resources. Several commenters asserted that any areas less than two acres should be excluded by virtue of Section 528(2) of the Act.

Exemption of exploratory or reconnaissance drilling operations due to the small size of the operations is contrary to the intent of the Act to protect fully the environment. The exemption in Section 528(2) of the Act applies only to surface coal mining operations of less than two acres in size, not exploration. A substantial disturbance may occur regardless of the size of the exploratory operation, the type of drilling done, or the type of structures erected for the purpose of exploration (Grim and Hill, 1974, pp. 17, 22, and 26; see also preamble discussion of Section 815.21). Because Section 512(a) and (c) of the Act and Sections 776.11, 776.15, 815.1, and 815.2 of the regulations employ the term "substantially disturb," and therefore, require its definition, OSM has decided not to delete the definition.

It also is clear that an exploratory operation may remove far fewer than 250 tons of coal in defining the limits of a seam, and cause a substantial disturbance to the land, air, or water as defined in Section 701.5. For these reasons, OSM decided not to change the definition of "substantially disturb." OSM believes that the definition provides adequate flexibility to enable regulatory authorities to structure appropriately their programs to the needs of their jurisdictions. For example, the phrase "signficiantly impact" can be further defined by the regulatory authority and the list of activities at the end of the definition can be supplemented by additional specific activities, if appropriate.

Coal processing plant. Comments were received requesting that the proposed definition be restructured and clarified. One commenter pointed out that the definition might have been interpreted to require both processing and loading at one site; and if loading were not present the facility would not fall within the definition. The commenter suggested the reference to loading be moved to the second sentence. This comment was accepted and the regulation changed accordingly.

Several commenters wanted clarification of which coal processing facilities, if any, are excluded from coverage of the Act. One suggested that the phrase "at or near the minesite" limits which coal processing plants are subject to regulation. However, OSM interprets the phrase "at or near the minesite" in § 701(28)(A) of the Act to modify only "loading facilities" and not any other of the facilities or activities listed in the definition of "surface coal mining operations."

A number of other commenters wanted certain types of coal processing plants excluded from the definition. Examples suggested for exclusion were coal processing plants within the control of the railroad or the recipient or user of the coal, such as a power plant. OSM believes ownership or control of the coal processing plant by a railroad or recipient or utility or other coal user is not dispositive of either exclusion or coverage. A processing facility owned by a public utility at a captive mine seems clearly to fall within what Congress meant OSM to regulate, while the same facility at a power plant fed by several independent mines might arguably fall outside OSM's regulatory reach.

OSM has not made any change in the definition in response to these comments because the precise line between coverage and exclusion is extremely difficult to draw. OSM's present interpretation is not to regulate coal processing plants situated at the point of ultimate coal use. These are to some extent regulated by State and Federal environmental protection agencies.

Coal processing waste. No comments were received on the definition of this term. It has been changed only by minor editing from the proposed regulations.

Combustible material. No comments were received on this term and it remains unchanged from the proposed regulations.

Compaction. A commenter suggested placing the word "bulk" before the word "density." The term density alone is sufficient as it is utilized universally without modifiers. Another commenter suggested making the definitions more precise by adding language expressed by the dry density at a certain moisture content as determined by standard or modified proctor. This is true for fine grained soils; however, compaction also can be expressed as relative density for large grained soils; bulk density for soil reconstruction or wet density. Rather than extending the definition to encompass all types of density, OSM has decided not to change the definition, except for minor editing for clarity.

Cropland. A definition of "cropland" has been substituted for the proposed definition of "cultivated crops" because cropland is a term that has a long history of use in USDA and is a basis for collection of statistical data on crop production and land use. The definition of cropland encompasses the definition of cultivated crops and includes: (a) *cropland harvested*—all land from which planted crops are harvested, including land used for hay and land in orchards, nursery, and other speciality crops; (b) *cropland failed*—the acreage on which crops failed because of weather, insects, and diseases but including lands not harvested due to lack of labor, low market prices, or other factors; (c) *summer fallow cropland*—cropland that is cultivated for a season or more to control weeds and conserve or accumulate moisture before crops are planted; (d) *idle cropland*—cropland in cover and soil improvement crops not harvested or pastured, cropland in government programs, and other idle cropland; and (e) *cropland pasture and hay*—croplands used in the long term rotation being planted in crops, and then reseeded to pasture or hay at varying intervals. Also included are lands planted to crops that were pastured before the crop reached maturity.

Because there is a continual shift between cropland uses, all five categories of cropland, where identified as prime farmland, are intended to be protected by OSM's regulations.

Cropland does not include land primarily used for pastureland or rangeland, or pastureland occasionally cut

for hay, or land on which the farm or ranch facilities are located.

Commenters were concerned with the definition of cultivated crops. Some noted a typographical error, soil crops should have been sod crops; some felt pastureland and grazing lands ought to be explicitly excluded; and others were concerned with the confusion that might result from the words "cultivated crops" and "usually tilled." The Office feels that these concerns should be satisfied with the new definitions of "cropland." A further discussion of "cropland" is found under the definition of "historically used for cropland."

Disturbed area. For a discussion of the definition of "disturbed area," see the preamble for "affected area".

*Diversion.*1. This term is used in many Sections of the permits and design and performance standards regulations. It is defined to distinguish between manmade structural diversions of water, which the Act regulates, and natural changes in the flow of water.

2. A few comments were submitted which recommended that the definition of "diversion" be amended to specifically include pumping. The recommended change was not made because, to the extent that pumping acts as a mechanical aid to moving water through or to a structure, it is covered by the existing definition of "diversion."

Downslope. A commenter suggested that the proposed definition excluded land between the outcrop and the most downslope portion of the mine. The commenter provided neither justification nor an alternative. OSM believes that the definition is clear and includes the area which concerned the commenter. The definition is changed from the proposed regulations by minor editing for clarity.

Economically viable agricultural unit. A commenter wanted to add a definition of economically viable agricultural unit, which would be based on five consecutive years of economic success. Such a definition would affect prime farmland and alluvial valley floors. The suggestion was rejected because it would base the potential for protection on economics and circumvent the physical criteria for determining which units will receive the protection afforded by the Act.

Eliminate. A commenter proposed a definition for "eliminate" to clarify its usage relative to highwalls and spoil piles. The commenter's proposed definition suggested that the commenter was really addressing the regulatory requirements for elimination of highwalls and spoil piles which are addressed in Sections 816.102 and 817.102. Those Sections reflect the statutory and Congressional concern with returning mined lands to their approximate original contour and eliminating highwalls. Because the substance of the comment addressed regulatory matters, a definition of the term "eliminate" has not been added.

Embankment. This term is used in many sections of the permits and performance standard regulations. The term is defined to distinguish between natural land surfaces and man-made deposits of material used to form dams, levees, or foundations for roads or railways.

Ephemeral stream. This term is defined to distinguish between intermittent streams and those streams which have a less frequent flow of water. Ordinarily, less elaborate provisions for protection of the latter are needed to fulfill the mandate of the Act to protect the hydrologic balance. Compare Section 816.43 with Section 816.44.

Several commenters felt that the proposed definition should be changed because the 30-day flow requirement was difficult to determine. The technical literature supported the commenter (Gary, M. et al, Glossary of Geology, American Geol. Inst., 1974, pp. 233). The Office accepted the change.

The final regulation added a phrase to clarify that snow-melt, without ground-water discharge, does not make a stream more than "ephemeral."

Essential hydrologic functions. (1) This important term is defined particularly to implement Section 515(b)(10) (F) of the Act through Section 785.19(c) to (e) and Part 822 of the alluvial valley floor regulations.

The basis for this definition was generally Congress' understanding that the essential hydrologic function of alluvial valley floors is to store, collect, and regulate the flow of water and to make it available for agricultural purposes. (See H.R. Rep. No. 95-218, 95th Cong. 1st. Sess. at 111-112, 116-118 (1977)). The detailed basis for the definition is as follows:

The four major components of the essential hydrologic functions (collection, storage, regulation and availability) are intimately interrelated and are a part of the hydrologic cycle. The four components as well as the entire hydrologic cycle are described at:

1. Chow, V.T., 1964. Handbook of Applied Hydrology. McGraw-Hill Book Co., Inc., New York, pages 1-2 to 1-5.

2. Hjelmfelt, A.T., Jr., and Cassidy, J.J. 1975, Hydrology for Engineers and Planners. Iowa State University Press, pages 5 to 8.

3. Linsley, R.K., Kohler, M.A. and Poulbus, J.L.H. 1949. Applied Hydrology, McGraw-Hill Book Co., Inc., New York, pages 1 to 4.

(2) A few commenters recommended that the definition of "essential hydrologic functions" be shortened but retain reference to "erosional equilibrium." The comment was not accepted because the definition is important to the AVF regulatory scheme as a whole, and to provide maximum, guidance as to what are considered the "essential hydrologic functions."

(3) Other commenters felt the phrase "holding moisture in soils" should be deleted from the definition. The suggested deletion was not made. Water holding capacity is important to and must be evaluated with respect to the role that a given soil plays in delivering water to the root zone of the plants. It is the opinion of the Office based on the definition of alluvial valley floors in 30 CFR 701.5, that soil moisture holding is important to vegetative growth and is an essential hydrologic function of alluvial valley floors.

One key to reestablishing vegetative productivity on mined alluvial valley floors lies in understanding the behavior of the hydrologic systems before the area is mined, so that it may be reconstructed using information derived, in part, from the study of the soils relationship to the saturated materials below the soil horizons and to what extent the soils themselves may act as a medium to store water or to act as a conduit for delivering water to the root zone. (See for example Chow, V. T., Handbook of Applied Hydrology 1964, McGraw-Hill Book Company Chapters 6, 11, 12 and 13).

The commenters hinted that soil moisture characteristics are to be considered separately from alluvial valley floors. The Office agrees these characteristics should be considered in cases other than alluvial valley floors but this factor cannot logically be separated from the hydrologic functions of an alluvial valley floor. The very reason subirrigated alluvial valley floors are important to the West is because the soil moisture content of alluvial systems is not directly dependent on seasonal climatic factors as suggested by the commenter; soil moisture is primarily dependent on water supplied by the alluvium below the soil. (See Hardaway, J.E., Kimball, D.B., Lindsay, S.F., Schmidt, J., Erickson, L., March 1977. Subirrigated Alluvial Valley Floors: A Reconnaissance of Their Properties and Occurance on Coal Resource Lands in the Interior Western United States (U.S. EPA, Region VIII, Denver, Colo.); Proceedings of National Coal Association and Bituminous Coal Research Symposium in Oct. 1977, pp. 61-135).

(4) A commenter felt the definition should include reference to wildlife. The comment was not accepted because congressional intent was to protect agricultural activities associated with alluvial valley floors and not to

include specifically wildlife in that protection. See Section 701(1) of the Act.

(5) Another commenter suggested the definition consider the role of snow and ice in storing water as it may be important to the Northern Great Plains and Alaska. The comment is not considered pertinent, since snow and ice may occur in upland areas and protected slopes which have not been demonstrated to be significant to alluvial valley floors. As the commenter noted, this will be investigated in the Alaskan Coal Study; if pertinent to Alaska, consideration can be given in any regulations developed pursuant to Section 708 of the Act.

(6) A commenter also wished to include *potential* agricultural uses in the definition. This was believed redundant, as this factor is covered in the definition and the definition is of functions that must exist regardless of whether the area is used for agricultural activities or not. The commenter's concerns are adequately protected by Section 510(b)(5)(A) of the Act which prevents surface coal mining unless it can be demonstrated that such mining will not preclude farming except where the acreage involved is so small as to be of negligible impact to the farm's agricultural production.

Excess Spoil. A commenter felt that a definition of "excess spoil" should be included which would define spoil as excess if it were located outside of the pit areas or other large areas from which overburden other than topsoil has been excavated. The comment was accepted as a valid concern as it is often desirable to have spoil placed in a controlled stable manner even if it is placed adjacent to the mine workings. Confusion has been exhibited by some who have construed the material placed adjacent to mine workings as material necessary to achieve approximate original contour and therefore not excess spoil requiring controlled placement regardless of its position on slopes or in drainages. In lieu of including a definition of Excess Spoil, the desired result was accomplished by adding language to Section 816.71 to achieve the same result.

Existing structure. See the Preamble for 30 CFR 701(11)(e) for a discussion of the definition of existing structure.

Farming. A commenter felt that "farming" should be defined the same as "agricultural activities" but pertaining to alluvial valley floors only. As the only use of the term "farming" in the regulations is in Section 822.12(a) and (b), and only relative to alluvial valley floors, it was not considered necessary to define the term. Another commenter recommended that a definition of farming be included that defines "farming" as economically viable agricultural activities. Because the term farming is only used with respect to alluvial valley floors such a definition could circumvent the intent of Section 786.17 which insures the Act's mandate that surface coal mining and reclamation operations will not preclude farming on alluvial valley floors; therefore the comment was rejected.

Federal program. This definition is based on the definitions in Section 701 of the Act. The authority for a "complete Federal program" and a "partial Federal program" is found in Sections 102, 201, 501, 503, 504, 506, 521 and 522 of the Act. The basis and purpose of this definition are explained in 43 *Federal Register* 41669–70 (September 18, 1978).

Flood irrigation. (1) This definition is intended to clarify the meaning of the term as it is used in the definition of alluvial valley floors (Section 701(1) of the Act) and in Section 785.19(c) and (d).

The basis for this definition is Congress' intention to include within the definition of alluvial valley floors those valley floors holding a stream which are or can be supplied by water from the drainage basin in which the stream lies, and excluding those valley floors which are not supplied water by either subirrigation or surface flows in the drainage basin. Specifically, the Office believes Congress intended to exclude from the definition of alluvial valley floors those valley bottoms containing unconsolidated stream-laid deposits which are able to receive sufficient water to support agricultural activities only if delivered artifically from sources outside the drainage basin.

(2) A commenter suggested a definition of flood irrigation so as to limit it to those lands which are 2.5 meters or less above the stream bed, and which require no human intervention for overbank flow to occur. The net effect of this definition would be to exclude rather large areas which are alluvial valley floors. First, because they would not meet the commenter's criteria if land areas are higher than 2.5 meters above the stream bed even though overbank flow occurs. Second, there is no suggestion in the legislative history that Congress intended to exclude areas irrigated by the use of instream diversion structures or checkdams which cause overbank flows thereby making streamflows available for agricultural activities. The general Western practice is to construct devices to maximize the use of any flow event. Furthermore, the Act in Section (701(1)) defines alluvial valley floor as locations where ". . . water availability is sufficient for subirrigation or flood irrigation agricultural activities . . ." without regard to the limitation suggested by the commenter. Therefore, the suggested criteria would be contrary to the Act. As a result the comment was rejected.

Fugitive dust. Authority for this definition is found in sections 102, 201, 507, 508, 515 and 516 of the Act. 1. Commenters suggested the need for a definition of "fugitive dust" similar to EPA's definition at 40 CFR 51.21(b)(6). The Office has decided to adopt a definition of fugitive dust which is consistent with the intent of the Act and final regulations to control fugitive dust from all surface areas affected by surface coal mining and reclamation operations.

The definition further clarifies the implied scope of the term provided by the fugitive dust control measures listed in Sections 816.95(b) and 817.95(b).

2. The Office rejected EPA's definition because it limits fugitive dust to particulate matter uncontaminated by pollutants resulting from industrial activity. EPA's definition also does not expressly include fugitive dust from haul roads. Finally, EPA's definition is used in conjunction with an exemption from air quality review. OSM's definition, on the other hand, is intended to describe the coverage of the final regulations as required by the Act. It is emphasized, however, that the fugitive dust definition must be read in conjuction with the permit requirements and performance standards to appreciate the precise scope of these regulations.

Grasslike Plants. A commenter suggested a definition of "grasslike plants." The Resource Conservation Glossary, Soil Conservation Society of American, 1976, p. 25g, defines grasslike plants as a plant that resembles true grasses, for example, sedges and rushes, but is taxonomically different. Since these species commonly occur, in varying amounts, in the original plant community, the Office believes grasslike plants often are appropriate for revegetation. The Office also recognizes that the frequency of occurrence of grasslike plants on a site may vary due to use or abuse of the original vegetation of the site. Thus, the frequency of occurrence of grasslike plants on the site when properly managed should be considered when determining success of revegetation. However, no definition has been included in these rules. The term is not used in the regulations and OSM believes the terms which are used are broad enough to include all revegetation practices permitted under the Act.

Groundwater. 1. This important term is used in numerous sections of the regulations pertaining to protection of the hydrologic balance.

2. A commenter felt that the definition of groundwater should be changed to mean the "tension-free

continuous mass of water below the soil surface." Accepting this would have led to confusion and would have required additional definitions of "tension-free" and "continuous mass." Furthermore, this change would not necessarily clarify the term for the general public, permittee or regulatory authority. Thus, the comment was rejected. Another commenter suggested using an unspecified widely accepted definition. The definition in the regulations conforms closely with the term as defined in common usage (see Webster's New Collegiate Dictionary, Merriam Webster Co., page 508, 1977).

Half-shrub. Some comments suggested that half-shrubs be considered under Sections 816.116 and 817.116. Since this term is commonly used in some of the mining provinces, the suggestion was accepted by the Office. Accordingly, a definition of half-shrub has been added. The definition comes from "A Glossary of Terms Used in Range Management," American Society of Range Management, 1974.

Head-of-hollow fill. 1. The definitions of head-of-hollow fill and valley fill were modified to describe more explicitly the slope criteria for the existing terrain at the fill site.

To be classified as either a head-of-hollow fill or a valley fill, the slope of the steepest section of existing topography within the fill site must be greater than 20 degrees, or the average slope of the profile of the valley from the toe of the fill must be greater than 10 degrees. If either of these two criteria are exceeded, then the fill is classified as either a head-of-hollow or a valley fill.

Twenty degrees is an acceptable test to determine steep areas in which extra precautions with spoil disposal are justified (see Sec. 515(d) of the Act).

Kentucky regulations require the slope of the existing ground at the toe of all fills to be 10 degrees or less (see also Skelly and Loy, 1977, p. II-3 and Huang, 1978, p. 5).

The top of head-of-hollow fills, when completed, must be at the same elevation as the adjacent ridgeline (see Greene and Rainy, 1975, pp. 1-8).

2. Comments were received regarding the feasibility of placing site limitations on these structures, especially when done so by definition. Based on seven years of experience of the West Virginia Department of Natural Resources, OSM has decided to allow head-of-hollow fills of less than 250,000 cubic yards, when associated with contour mining, to have the top elevation of the fill equal to the coal seam elevation. For further discussion of head-of-hollow and valley fills, see the Preamble for Sections 816.71-816.74.

Highwall. No comments were received on this term. A minor editorial change was made for clarity. The definition follows closely the definition found in Grim, E. C. and Hill, R. D., at 217, 1976; Erosion and Sediment Control: Surface Mining in the Eastern U.S., EPA-625/3-76-006, p. 97.

Historically used for cropland. The historical use clause must be evaluated in its entirety, "historically used for intensive agricultural purposes," because of the all-encompassing definition of cropland and its relationship to the historical-use period. However, for clarity this one definition will be broken down into two components: (1) What is meant by intensive agricultural purposes and (2) what time span should be considered as an historical-use period?

"Intensity of agricultural use" refers to the amount of economic input, less land costs, that is expended to produce a crop. Intensive farming is farming in which a comparatively large amount of labor and working capital is used per acre of farmland. For this reason "intensive agricultural purposes" is defined to mean cropland for purposes of the Act, interim regulations, and final regulations. The definition of cropland is discussed above.

The Office believes that the intent of the Act is to protect the 250 million acres of prime farmland soils which have a demonstrated cropland use and that are a part of the 400 to 500 million acres of cropland in the United States. The total acreage of the five cropland classes has remained relatively constant since 1949, a peak cropland year. It is, therefore, assumed that nearly all prime farmlands would have been in crop production for some amount of time since 1949. As a result, the historical-use period need not extend to dates prior to 1949.

The alternatives considered for the historical-use period as a result of comments were:

1. Choose a time frame of 20 years or less and a specified number of years within that time (5 in 20, 14 in 20, 4 years prior, 10 year history, 5 in 10, 7 in 10, 1 in 2, anytime).

2. Leave definition to regulatory authority or other State, Federal, or land management agency.

3. Historically used prior to the Act, regulations, permit applications, or date of purchase for mining purposes.

4. Allow for flexibility at the discretion of the regulatory authority.

5. Define as 5 years in 20 prior to the permit application as included in the proposed regulations.

A historical-use period of 10 years prior to the permit application was suggested by many commenters, indicating that the cropland record is readily available from a variety of local sources. The Office agrees that a minimum 10 year historical-use period prior to the acquisition of the land for the purpose of obtaining a mining permit should be evaluated. Because the number of cropland acres has remained relatively constant since 1949 and these have been peak cropland years, the prime farmland resource that is intended to be protected by the Act should have been in crop production since that time, and would, therefore, fall within this time period.

Prime farmland used as cropland for fifty percent or more of the historical-use period will be considered as prime farmland historically used as cropland. Fifty percent or more was chosen because this represents the predominant land use in the historical period.

Many time frames were suggested by the commenters as outlined above. OSM believes that cropland data for the last 20 years is not readily available in all prime farmland areas. Data for ten-year period would be more readily available from local records and other recognized sources. However, the period may be extended to include more years at the discretion of the regulatory authority. A historical-use period of less than 10 years was dismissed because it was felt that a land use history of less than 10 years would not fully establish a land use history. A predominant cropland use within those 10 years was felt to be sufficient to establish a cropland use. Therefore, five years or more was selected.

The definition of historical use must be uniform across all coal producing regions to prevent an unfair advantage for some regions. For this reason, the second alternative was rejected.

It is necessary to establish a date from which the historical period must be measured. The periods prior to the Act, regulations, permit application and the date of land purchase for mining purposes have been suggested. The dates of the Act, regulations, or permit application are rejected because they may not truly represent the historical-use period of the land. The years prior to the date of the land purchase would better represent a prime farmland historical use, because it would not be influenced by the mining activity. Once land is purchased for mining, it is not likely that the owner will initiate prime farmland use.

Many variations of the historical use period have been suggested. A commenter claimed that local farming conditions vary considerably from region to region and are heavily dependent upon the local economy, market conditions, and government regulations. The regulatory authority may want to extend the historical use period to include prime farmlands important to the State or local economy,

but have not been used as cropland for the 5 in 10 year minimum period. The final definition reflects the State regulatory authority's latitude to designate prime farmlands based upon a longer historical period to include more cropland under the historical-use provisons but are not intended to exclude any lands from the minimum criterion of 5 years in 10. This provision is included because of the potential for prime cropland to be taken out of cropland use for more than 5 years in 10 due to ownership circumstances which do not relate to the capability of the land to produce crops (such as retirement, widowed, litigation). However, such land is clearly prime farmland in temporary retirement and definitely part of the prime farmland resource addressed in the Act.

The proposed regulations required a historical-use period of any 5 years in the 20 year period prior to the permit application. The 5 years in 20 criterion was dismissed in the discussion under alternative 1. Because the Office has adopted a more precise definition of cropland, the long-term rotation of crops is included as it was in the proposed rules.

A historical-use period of any five years of cropland use within the 10 years preceding the date of purchase of the land for the purpose of mining will be considered historically used for cropland. This 5 in 10 year criterion may be extended to include more years of cropland history only to increase the prime farmland acreage to be preserved: however, this extension of the land use history is not to go beyond 1949.

Hydrologic balance.

1. This term is based on the understanding of the term as utilized by the Congress. See H.R. Rep. No. 95-218, 95th Cong., 1st Sess., at 107-108 (1977).

2. A commenter felt that the proposed definition of hydrologic balance should be adjusted to emphasize that "hydrologic balance" is rarely, if ever, static, but rather is a dynamic equilibrium of the hydrologic system. The comment was accepted as the addition will serve to clarify congressional intent. H.R. Rep. No. 95-218 *supra*, at 107-108.

Hydrologic regime. One commenter suggested that the proposed definition should be altered to focus on changes in the hydrologic cycle caused by the local environment. It is implicit that changes in the cycle due to the "local environment" would change the local hydrologic regime. The suggestion was rejected in favor of a definition corresponding to general usage. Webster's New Collegiate Dictionary, 1977, at 973 defines "regime" as "the characteristic behavior or orderly procedure of a natural phenomenon or process."

Imminent danger to the health and safety of the public. A few commenters suggested changes in the definition of "imminent danger to the health and safety of the public." The suggestions were rejected because the definition is statutory language and the commenters provide no basis by which to change it.

Impoundment. A commenter suggested that the word "closed" be eliminated from the definition of "impoundment" since a closed basin is terminology that usually applies to areas from which there is no discharge. OSM has rejected this suggestion and the definition is included as proposed. Closed basin, as it is used in this definition, denotes a basin from which the normal runoff flow is restricted so that it will not freely flow out of the basin. This restriction will cause the runoff water to back up in the basin but does not preclude controlled flow from leaving the basin.

In situ processes. No comments were received on the definition of this term. It is changed by minor editing from that of the proposed regulations.

Intermittent, perennial, and ephemeral streams. 1. These terms are adopted, first, to distinguish continuously or nearly continuously flowing streams from ephemeral streams, because different regulatory controls are needed to protect these two categories. Second, the terms are defined to distinguish continuously from nearly continuously flowing streams. Substantial comments were received on these definitions. For clarity, intermittent and perennial streams are defined in separate Paragraphs in the final rules.

2. Commenters suggested changes in the proposed definition of intermittent stream. OSM considered three alternatives to the one-month continuous flow criterion of the proposed rule and various combinations of those alternatives: (a) flow for at least six months; (b) a drainage area of one square mile or more; (c) stream below the local water table at some time during the year. OSM has amended the definitions of both "ephemeral stream" and "intermittent stream" based on the concerns expressed in these comments.

(a) A one-square mile watershed concept was adopted for intermittent stream, because at least two states (Alabama, Illinois) have found it easy to administer and apply. Further, even for arid regions, a stream draining that much land has the potential for flood volumes that necessitate application of the stream channel diversion criteria of Sections 816.44 and 817.44. (See Linsley, R. K. et al, 1975, Hydrology for Engineers, McGraw-Hill, pp. 144-145.)

(b) OSM also adopted the criteria that a stream be "intermittent", if it lies below the water table for some part of the year and receives flow from groundwater discharge as well as surface discharge. These criteria recognize that, even on small drainage areas, climate and ground water characteristics can produce a stream with sufficient flow potential to require special handling for diversions and other purposes. (See Chow, V. T., 1964, Handbook of Applied Hydrology, McGraw-Hill, pp. 21-35 on discussions of watershed size to runoff).

(c) The determination of whether a stream bed lies below the local water table for "some part of the year" must be made by a qualified expert where it is not clear whether the stream receives groundwater discharges. The determination is, for example, applicable where the stream flows for several days or longer after all snow is gone or after the last rain. OSM did not specify a "one day" flow for this criterion. Instead, the regulatory authority is given latitude to make a reasonable judgment about whether stream discharge is a result of the stream bed being below the local water table.

(d) A six-month flow criterion was rejected, because it did not relate to the purpose of any performance standard requirement of the Act.

(e) The definition of "intermittent stream" that OSM adopted is slightly different from part of the definition of "intermittent stream" recommended in a comment from the U.S. Geological Survey. In USGS, 1960, Water Supply Paper No. 1541-A, p. 18, the term was defined to include streams receiving flow ". . . from some surface source such as melting snow in mountainous areas . . ." The OSM definitions are better for the purposes of the performance standards, because a stream otherwise "ephemeral" is not less so merely because it flows in response to snow-melt.

3. The "ephemeral stream" definition has been modified to include flows caused only by melting ice and snow, so there is no need to include reference to that in the definition of "intermittent stream." The Office recognizes that, under the originally proposed definition of ephemeral stream, any drainage in a coal region subject to heavy winter snow cover might flow continuously for more than 30 days during the melt period and risk being misidentified as an intermittent stream, even where the flow was of such small magnitude that the Office would not intend application of the stream channel diversion Sections (816.44; 817.44). However, if snow-melt flows are large and of long duration, the drainage channel may well be below the local water table or may have flowed for such a length of time

that a biological community (see 816.57 and 817.57) will have developed in the streams. In those cases the stream will not be classified as ephemeral. Classification will be made at the time of permit application based on collected data and probable conditions for the life of the mine. This should help to separate out unusual wet or dry periods that may confound average rainfall and runoff conditions.

4. The term "perennial stream" in the final regulations is based on a definition of that term in U.S. Geological Survey, 1960, supra, pg. 18.

Land use. The concept of land use appears in three principal places in the Act. Section 515(b)(2) requires the operator to restore the affected area to a condition capable of supporting the uses which the land was capable of supporting prior to any mining, or to higher or better uses. Section 515(c) of the Act provides that a variance from the requirement to restore to original contour may be obtained in a mountaintop removal operation. Postmining land uses permitted are industrial, commercial, agricultural, residential or public facility (including recreational facilities). Similarly, a variance may be obtained in steep slope mining (Section 515(e)). The permissible postmining uses under this variance are industrial, commercial, residential or public use (including recreational facilities).

Several commenters suggested that the number of land use categories be reduced. Some suggested that the only categories defined be agricultural and natural resources, residential, industrial and commercial. Others suggested that only three uses should be defined—agricultural and natural resources, residential and industrial. Several felt that a reduced number of land uses categories would be adequate to protect public and governmental interests. A few recommended using broad categories and stated that existing zoning plans are not based on definitions as specific as those used in the regulations. In connection with its general consideration of these comments, the Office considered several approaches which might be taken in defining land use. Four alternatives were considered: (1) define only those five categories of land use necessary for variance determinations under Sections 515(c) and 515(e) of the Act; (2) provide criteria only on the issue of what constitutes a higher or better use (Section 515(b)(2)) and equal or better economic or public use (Section 515(c)(3) and 515(e)(3)); (3) develop two separate definitions of land use categories resulting in one set for determining higher or better uses and a second set for defining proposed land uses in connection with the variances from approximate original contour; and (4) define a number of land use categories and make the definitions applicable to variance determinations as well as to decisions on higher or better use under one set of criteria in Sections 816.133 or 817.133.

The Office believes that a regulatory program in the form of either of the first three alternatives will result in inconsistency of application of these regulations and thus inconsistency in land use decisions under the Act. Furthermore, the Office believes that neither of the first three alternatives can accomplish one of the principal purposes of the Act—that the potential utility of mined areas for a variety of purposes be maintained or enhanced. (S. Rept. 95-128, 95th Cong., 1st Sess., 76-77, 124 (1977); S. Rept. 93-402, 93rd Cong., 1st Sess., 60, (1973).) The Office has adopted the fourth alternative, believing that it offers sufficient flexibility to operators and regulatory authorities and insures adequate regulatory control over land use decisions.

In connection with the specific comments directed at the fifteen categories in the proposed regulations, the Office considered the following alternatives: (1) reduce the number of categories and include only those commonly used by State and local planning authorities; (2) change the terms and definitions to match those commonly used by planning authorities; (3) consolidate the categories to more clearly reflect those used in the initial program and to represent the minimum list that would meet the requirements of the Act; and (4) make no change in the regulations as proposed.

Reducing the categories to those commonly used by State and local governments or changing the definitions to match those used by planning authorities does not provide an appropriate breakdown for determining when a determination of a higher or better land use is required because of changes resulting from mining. For the purposes of the regulations, higher or better land use is determined on a site-by-site basis by the individual landowner or manager and the regulatory authority, and not as traditionally interpreted by local zoning commissions or boards.

The third alternative was selected and the definitions were revised and consolidated. Fish and Wildlife habitat was revised to make it clear that it is a permitted use. Cropland, pastureland and grazingland were not combined since each is a separate and viable agricultural use.

"Grazingland" as defined in the land use categories is intended to encompass rangeland uses. However, it is also necessary specifically to define "rangeland" (see discussion, *infra*) in connection with other regulations (see Sections 785.19 and 822.12, for example). The definition of grazingland here is intended for use in determining whether or not an alternative post mining land use will result from the surface coal mining and reclamation operations.

The definition of developed water resources was retained to enable the regulatory authority to control permanent impoundments. (Under Sections 816.49 and 817.49, permanent impoundments are prohibited unless, *inter alia*, such impoundments are suitable for the approved postmining land use). "Undeveloped land" was revised in order to avoid land use determinations which involve undeveloped land areas which might otherwise be interpreted as fitting in one of the other nine categories. The Office believes the revised definitions should facilitate designation of use activities that reflect different land management practices or intensities of use and, therefore, require approval of the alternative postmining land uses.

A few commenters suggested that this Section state that the alternative land use procedures do not apply where the proposed postmining land use is identical to the premining land use. While correct, the Office believes that adding this language is unnecessary. However, the Office has revised the introductory paragraph of "land use" to make it clear that changes from one of the stated categories to another constitutes an alternative land use which must be approved by the regulatory authority under Sections 816.133 or 817.133.

Some commenters suggested adding the words "within the permit area" in the introductory paragraph in order to specify the area for which a land use should be determined. The Office also considered addition of the words "within the mine plan area" in connection with this comment. The effects of land use changes may be apparent in the mine plan or permit areas as well as in adjoining areas. Since the purpose of the land use definitions is only to delineate categories of use activities and the descriptions of proposed uses required by Sections 780.23 and 784.14 are related to the proposed permit area, it was felt that no change in the definitions was required.

These commenters also raised the issue of permit area or mine plan area in light of the question of "not knowing whether to use one acre, two, ten or whatever" as the resolution of category area delineation. In practice, land use categories will only be used to determine if the postmining use has changed from the premining use. A different or alternative use occurs when any change of use occurs. Since all land uses, regardless of area coverage, are to be categorized, differentiating between primary and secondary will not add substantively to the infor-

mation needed to make this decision. Therefore, the requirement in the proposed regulations of "when combined uses are designated, one land use shall be identified as primary and one or more others designated as secondary land uses" has been deleted.

Some commenters suggested that ambiguous wording in the definition of cropland could be construed to mean that land which is completely separated from a farming facility is included within the definition. The intended meaning was to have related activities included within the definition if they are adjacent to and an integral part of the operation. Clarifying language and examples of related activities have been added to cropland, and to other definitions where appropriate.

Some commenters suggested revisions to the definition of cropland so that terms with commonly accepted meanings were used. One also suggested replacing the definition of cultivated crops with "cropland." The Office agrees that terms such as row and small grain crops are commonly accepted terminology and these changes have been made in both definitions. A separate definition of cropland is necessary for the regulations relating to prime farmland (e.g., Part 823). The definition of cropland here is intended for use in determining whether or not an alternative postmining land use will result from the surface coal mining and reclamation operations.

Some commenters suggested revising the definition of forestry by referring to a percentage of plant or tree cover. OSM considered the following alternatives: (1) no change; (2) adopt the U.S. Forest Service definition of forest land; (3) adopt the Department of Agriculture (USDA) definition; (4) combine the existing definition with the USDA definition. The Forest Service and USDA definitions do not reflect use or management but instead define forest land as a type of plant cover. This limited definition was not acceptable for the land use determinations required under the Act. Combining the USDA definition with the proposed regulation resulted in a comprehensive definition that combined the concepts of use and management as well as plant cover; however, the Office did not believe that the additional wording directed toward the percentage of canopy cover provided a more substantive definition. Therefore, no change was made as a result of these comments.

A few commenters suggested a change to the definition of grazingland so as not to exclude those areas where introduced species are being used in certain grazing management plans. Alternatives considered were: (1) no change; (2) include the terms "or introduced" vegetation and change the wording to identify grazingland as consisting of "principally native grasses." If grazing is practiced where introduced species are planted, the area should be categorized as pastureland or land occasionally cut for hay. As a result, the suggested change was not adopted. However, to avoid confusion over the land uses of grazing indigenous plant species and pasturing of introduced plant species, the category of pasture land or land occasionally cut for hay has been revised to reflect the difference between these two forms of management.

Some commenters suggested changes to the definition of undeveloped land. Some suggested that the definition be revised to read ". . . not presently used, *improved*, or managed . . ." Others suggested referencing a four-year period to prevent confusion between idle land and land involved in crop rotation. OSM considered these alternatives as well as the alternative of no change. The Office believes addition of language relating to unimproved land is unnecessary because this concept is included in the term "undeveloped." The Office has revised this Section in response to the second set of comments to include land which has reverted to a natural state. Cropland which is in rotation but has not reverted to a natural state would be included within the definition of "cropland."

Macroinvertebrate biological community. The definition of this phrase was proposed in order to use it as an identifier for streams to which the stream channel diversion and (816.44; 817.44) buffer zone provisions (816.57; 817.57) apply. Since the only use of the term in the final rules is for the buffer zone regulations, the Office removed the definition from Section 701.5 and used it in a slightly modified form in Sections 816.57 and 817.57. For further discussion of the terms see the preamble to those sections.

Material damage. A commenter suggested that this term be defined for purposes of subsidence. However, the Office believes it is not necessary to define the term for subsidence purposes in these rules. Additional definitions may be included in State or Federal programs, if appropriate.

Materially damage water quality or quantity. (1) This definition is intended to clarify the meaning of the term as it is used in Section 510(b)(5)(B) of the Act, and Sections 785.19(3)(ii) and (3), and 822.12(c) of the regulations governing mining on alluvial valley floors. It is not intended to define "material damage to hydrologic balance outside permit area" as used in Section 510(b)(3) of the Act except to the extent that provision is relied upon as authority for applying the "materially damage" prohibition to areas of alluvial valley floors which are not significant to farming, or which provide negligible support for farm production, and which are outside the permit area of a proposed or permitted operation. The definition is adopted under authority of Sections 102, 201, 501, 503, 504, 507, 508, 510, 515, 516, and 517 of the Act.

As used in Section 785.19(e)(1), the defined term is not reproduced exactly as it appeared in Section 701(5) of the proposed rules; the "or" is changed to an "and." This change was made in order to assure the proper meaning of the term as used in the context of the sentence constructed at Section 785.19(e)(1)(ii). The referenced sentence is not intended to follow the structure of the sentence at Section 510(b)(5) of the Act, but to clarify an ambiguity which arises out of the use of a double negative in the opening clauses of the sentence. As drafted, the congressional language might be read as allowing an operation to pass the test of Section 510(b)(5) and require a permit to issue if either Paragraphs (b)(5)(A) or (b)(5)(B) are met, but not as requiring that the tests of both Paragraphs (A) and (B) must be met. The legislative history indicates that this was not the intended reading of the "or" between Paragraphs (A) and (B), and that the drafters intended that both tests be applied. However, in order to avoid the syntactic ambiguity, the Office changed the "*or*" in the defined term to "and" in the context of Paragraph (e)(1)(ii) so as to make clear the regulatory authority must find that the operation will not materially damage both quality and quantity, and that if either would be damaged, then the permit would need to be denied.

(2) The definition of "materially damage the quantity or quality of water" as proposed covered all changes in the quality or quantity of surface or ground waters. This could be construed to be *any* change of any measure of quality or quantity without regard to its consequences. Of the comments received on this point the following alternatives were suggested: modify the definition to apply to "detrimental changes"; limit it to "adverse" changes; use the concept of "reducing the capability of;" use the phrase "substantially and adversely;" limit it to changes "precluding farming," qualify it to allow beneficial changes, and substitute "measurable degradation" for "change." The comments are correct in their assessment that the proposed definition in Section 701.5 is too restrictive; thus the definition included in Section 786.17(d)(1) of the proposed regulations was used to reflect more accurately what is meant by the term.

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Mine plan area. See preamble for affected area.

Moist bulk density. (1). This term has been added to Section 701.5, in response to numerous comments received on the prime farmland soil reconstruction performance standards regulations (Part 823), which suggested use of moist bulk density, rather than soil permeability, as the best indicator of soil compaction. The Office's explanation for accepting these comments is set forth at the preamble below for Sections 785.17 and 823.14. Legal authority for defining the term is section 102, 201, 501, 503, 504, 506, 507, 508, 515, and 516 of the Act.

(2) The term is defined on the basis of technical criteria specified in *USDA, Soil Survey Investigations Report No. 1, "Soil Survey Laboratory Methods and Procedures for Collecting Soil Samples,"* SCS 1972 (Revised) pp. 14-16. However, it should be noted that under Section 785.17(b) (3) alternative methods for estimating moist bulk densities may be authorized in particular circumstances, in which event the definition in Section 701.5 will not apply.

Mulch. Several commenters argued that the regulations should contain wording that defined "mulch" as in Section 715.20(d) of the initial regulations. Another commenter's suggestion that mulch be defined in the final regulations was accepted in 701.5. Commenters pointed out that the lack of definition for mulch could preclude use of chemical soil stabilizers which may be superior to vegetative residues as mulch. In addition, as one commenter suggested, the objective of mulching is to promote establishment of vegetation, enhance water retention capabilities of the soil, and decrease erosion effects of wind and water. These regulations contain a definition for mulch which makes it clear that many types of mulch are suitable. (See, e.g., USEPA, 1976, Erosion and Sediment Control, Vols. 1, 2.)

Noxious plants. No comments were received on the definition of this term and it is unchanged from the proposed regulations. It is defined broadly to allow States to use their existing lists to determine what constitutes a noxious plant in that area.

Operator. The definition of "operator" follows the statutory definition in Section 701 of SMCRA, except that it extends coverage to extraction of coal from coal refuse piles. This addition was made to agree with the definition of "surface coal mining operations" and is based on an Office decision as described in a letter from the Solicitor of the Department of the Interior, Leo Krulitz, to Representative Gus Yatron, dated March 13, 1978, that explicitly includes coal extraction from coal refuse piles as within the scope of responsibility for regulation by the Act.

Outslope. A commenter states the definition of "outslope" is not clear and may lead to confusion, in that it could be read to include areas above the bench. For clarification purposes the definition has been edited to make it clear that the area above the bench is not included.

Overburden. 1. A commenter suggested that the definition be changed to ". . . may or may not include topsoil" because this definition and the provisions for topsoil removal and redistribution need to recognize that alternatives to topsoil replacement should be allowed. OSM does not intend that this definition or the regulations regarding topsoil limit the appropriate use of topsoil alternatives or substitution. OSM believes that this definition does not alter the statutory intent with regard to topsoil. See also the Preamble for the definition of topsoil.

2. This definition has not been changed from that of the proposed regulations. It follows closely the definition found in Grim, E. C. and Hill, R. D., at 219, 1976, Erosion and Sediment Control: Surface Mining in the Eastern U.S., EPA-625/3-76-006, pp. 98.

Perennial stream. No comments questioned the definition of perennial stream. OSM has separated the definition from the definition of intermittent stream for clarity. See intermittent stream preamble.

Performance bond. Due to comments received requesting clarification with respect to bond forms, the definition of "performance bond" has been changed to make it a generic term of general reference which incorporates each of three types of bonds identified by Congress in Section 509 of the Act, i.e., surety bonds, collateral bonds and self-bonds. These three bond types are defined separately at 30 CFR 800.5. The definition of "performance bond" is designed to exclude detailed specific criteria in order to facilitate drafting and interpretation of the regulations and to avoid repetition in the text.

Permanent Diversions. This term is defined to distinguish between those diversions of water occurring during surface coal mining and reclamation operations which will be eliminated at or prior to the termination of reclamation operations, (temporary diversions) and those which will last through a later period of time (permanent diversions). Because of the significant alteration of the hydrologic balance that can occur from diversions, (USSCS, 1971, at p. 362) permanent diversions, as defined, must first be approved for retention after the cessation of reclamation operations by the regulatory authority.

Permit. 1. The definition is expanded from that in Section 701(15) the Act to clarify the role of the Secretary with respect to "permits" for surface coal mining and reclamation operations on Federal lands. It has been changed by minor editing from that of the proposed regulations and by changing "Director" to "Secretary" to retain the authority for mine plan approval on Federal lands with the Secretary.

2. A commenter suggested an alternative to the proposed definition, but provided no justification or rationale for making the change. Without this information, OSM is unable to determine whether the commenter's alternative is more suitable than the proposed definition.

Permit area. See preamble for affected area.

Permittee. Several general comments were received which expressed concern over the problem of wildcat operators, i.e., persons operating without a permit. The definition of permittee was revised to include persons required to hold a permit, to make it clear that a person cannot exempt himself from the requirements of the Act by failing to obtain a permit. This continues the interpretation made and implemented by the Office during the initial program.

OSM made this change to clarify further its resolution of an inconsistency in the Act. Sections 503(a)(4), 504, and 506 through 511 of the Act clearly demonstrate the central importance of the permit for regulating coal mining. Everyone who wishes to mine coal must obtain a permit under the Act before doing so. Sections 502 (a) and (b) (initial regulatory program) and 506 (permanent program). Nevertheless, the penalties and enforcement Sections 518 and 521 frequently apply to a permittee. Without addressing this inconsistency, the use of the word "permittee" in these Sections could lead to the anomalous result that every person who mines coal is legally required to have a permit, but none of the Act's enforcement powers are applied to a person who mines without a permit.

The Office has addressed this inconsistency in two principal ways. First, the regulations, including the enforcement regulations, usually apply to a person rather than to a permittee. Second, the phrase ". . . or required by the Act or this chapter to hold . . ." was added to the definition of permittee. By this addition, the Office means to further clarify that its interpretation of the Act is that any person who mines without a permit is in violation of the Act and regulations and is

subject to enforcement action under the Act.

Precipitation event and *recurrence interval.* These terms are defined for use in the many places in Subchapters G and K where the sizing of structures and conveyances with respect to volumes of water are addressed.

The term precipitation event is essentially defined to include the quantity of water released onto the surface within a limited period of time from precipitation. No particular period of time is specified (e.g. 6-hours, 24 hours), because different durations of precipitation events are addressed in the regulations, depending upon the magnitude of the threat from excess precipitation and the function of particular structures or conveyances to contain or convey flows of water.

3. Commenters objected that the proposed rule did not specify all of the types of precipitation that should be covered. Accordingly, the final rule was written to specify that drizzle, rain, snow, sleet, and hail are all included within the concept of precipitation. However, commenter's objection to the inclusion of snowmelt within the definition was not adopted, although the use of snowmelt was clarified. Snowmelt is commonly included as an equivalent form of precipitation event in regulations defined by the National Weather Service Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S." May 1961, and subsequent amendments or equivalent regional or rainfall probability information developed therefrom.

4. A commenter suggested that the term reflect a flood of a specified size by the percent chance of exceeding that size in any one-year period rather than by the average time interval between such floods. This change was not accepted because the specified recurrence interval as used in the regulations deals with precipitation events, not floods and must conform with other existing regulations, in particular, Sections 816.42 and 817.42 effluent limitations which correspond in some ways to EPA regulations. Also, the term must be specific when dealing with design criteria such as sediment ponds (Section 816.46). The term as defined in the regulations is recognized and accepted in current standard engineering design formulas and practices. (See Preamble for Sections 816.41—816.57; in particular, Harrington, J.H., 1977, p. 1: U.S.D.I. Bureau of Reclamation, 1960, pp 39-67 U.S.D.A. SCS, 1971 p. 3)

Prime farmland. This definition is based on Section 701(20) of the Act. Several commenters suggested the change of "cultivated crops" to "cropland." The definition has been altered by substituting "cropland" for "cultivated crops." This also relates to the definition of "historically used for cropland." A more detailed explanation of the change may be found under the Preamble for those definitions. Another commenter felt that the prime farmland definitions should incorporate an evaluation of the economic viability of the prime farmland under consideration. The Act does not allow the Office this latitude.

Productivity. The definition of productivity was deleted, because the Office believes the meaning of the word is generally agreed upon. Moreover, there are slight differences in meaning in the places it is used which are obvious from the particular context.

Professional geologist, engineer and surveyor. A commenter expressed concern that the term "professional geologist" would be construed to mean a licensed geologist to the detriment of geologists in States which do not have licensing procedures for geologists. Others objected that the regulations eliminated the role of the surveyor as a "prime professional." The commenters contend that surveyors are capable of performing many if not all of the duties delegated to "registered professional engineers." A number of alternatives were considered which ranged from no changes, defining what professional registered engineers, professional geologists, and engineering geologists are, to including professional surveyors in the same capacity as engineers. Since the States generally have registration or licensing requirements for these professions, no definitions will be in the regulations. The States will be able to utilize existing State criteria or develop additional criteria to define these professionals if necessary.

In the Act there is no authority that would allow, by regulation, surveyors to perform the design functions presently delegated to engineers. At no point in the review of the legislative history was there evidence that Congress intended for surveyors to do more than make and certify maps, plats, etc. It is clear that Congress fully intended that dams, valley fills, sediment ponds, etc., be either designed by or at least certified by a registered professional engineer or professional geologist. It is therefore not appropriate to change the regulations.

Rangeland. A commenter wanted to delete "for purposes of prime farmlands" from the definition of rangeland, noting that the rangeland definition is used elsewhere in the Act. The comment is accepted because this defined term is applicable only to the alluvial valley floor regulations. The definition of "grazingland" under "land use" is intended to encompass those land uses and activities which might ordinarily be called rangeland.

Recharge capacity. (1) This term is defined to aid in implementation of Section 515(b) (10) (D) of the Act and is based on Congress' understanding of the term. H.R. Rep. No 95-218, 95th Cong. 1st Sess. at 116 (1977).

2. Commenters' objections to inclusion of the term "zone of saturation" within the definition were rejected, because this would have eliminated the important concept of water movement to the saturated zone, which is a critical element of Congress' mandate to protect the functional utility of recharge characteristics. *See, id;* Chow, V.T., 1964, Chapter 12, 13. See also the Preamble discussion for Section 816.51.

Reclamation. Authority for this definition is found in Sections 102, 201, 501, 508, 515, 516, and 701 of the Act. Reclamation is not expressly defined in Section 701 of the Act, although it is used in the definition of surface coal mining and reclamation operations. See Section 701(27) of the Act. Section 508 of the Act establishes the requirements for reclamation plans. Reclamation also is used in Sections 515 and 516 of the Act. Because the regulations reflect the statutory use of the term, OSM believes its definition is necessary to give meaning to the regulations.

The definition is intended to state concisely the essence of reclamation, restoring land which has been mined to the postmining land use which has been approved by the regulatory authority as part of the permit approval process. This definition is similar to that given for the term in *Glossary of Surface Mining and Reclamation Technology, National Coal Association, October 1974, p. 16.*

Recurrence Interval. See Preamble for precipitation event.

Reference area. (1). This term is defined because it is used to designate the area to be selected for comparison with reclaimed areas to determine the success of revegetation of those areas under Sections 515(b)(19)-(20) and 519 of the Act. A commenter suggested that reference areas must be denuded of all natural vegetation before use as a reference area and that denuding should be reflected in the definition. The rationale for rejecting this comment can be found in the Preamble for Section 779.19.

(2) Another commenter argued that the reference area concept is subject to numerous and widely varying interpretations because key words in the definition and performance standards are not defined; examples are "appropriate management" and "produced naturally." OSM agrees with the commenter's suggestion that appropriate management can have varying meanings. However, appropriate management would, by necessity, be related to

the proper use, relative to the intended purpose, of the approved land use. The management of a reference area does not preclude natural vegetation. However, the definition has been modified to provide for and clarify the use of a reference area for determining success of revegetation of cropland pursuant to Section 816.116(1)(3)(iii).

(3) Further, the commenter argued that the parameters proposed for comparison between the reference area and the permit area will be difficult. Specifically mentioned were species diversity and production. It was contended that species diversity on the reclaimed area can be made to exceed that of the reference area simply by planting more species than occur on the reference area. This contention is true, but it overlooks the purpose of a reference area, which assures equality of plant diversity that is compatible with the postmining land use. The commenters' contention is true that information developed for determining adequate production would never be valid or justifiable when comparing smooth bromegrass, on a reference area and switch grass on the revegetated area. However, such a reference area would not truly be a valid reference area under the described conditions. The ground cover and the ability to control erosion are keys to determining success of revegetation when using herbaceous species. Productivity will be determined on a number of stems of woody species since maximum volume or bio-mass of a newly established shrub or forest vegetative community would not be attained for a number of years. Cover and number of stems are recognized measures of determining success, therefore, the language being questioned is retained.

Renewable resource lands. 1. This definition has been moved to this Section from proposed Section 762.5. It is used in Sections 784.20 and 817.121—817.126 with respect to subsidence as well as in Subchapter F with respect to designation of lands as unsuitable for mining.

2. Some commenters suggested providing a test for significance within the definition. OSM believes this is not necessary because a test of significance is contained within the criteria for renewable resource lands. See Section 762.11(b)(3).

3. Other commenters suggested that areas used for production of game or sportfish and other forms of aquaculture should be deleted because fish and wildlife are covered by the fragile lands definition. OSM accepted this suggestion.

4. A commenter suggested adding "springs, wells, and prime farmlands" to the definition. OSM believes that the proposed definition is sufficiently broad to include those items without specifically adding them.

Road. 1. Many comments were received on the road definition. Numerous comments strongly objected to the proposed definition and recommended a definition that recognized the proposed use of a road so that the planned use of a road will match the design. This recommendation has been adopted.

2. Many comments suggested the road definition recognize different classes of roads based upon the volume of traffic, speed and weight of vehicles. Comments also were directed to using a 3-class technical classification system based on proposed use outside of the pit area. The comments have been considered and, as modified for clarity and statutory consistency, accepted.

3. Several comments raised concerns that unnecessary requirements would be placed on roadways or ramps within the pit area controlled by a drainage plan. It was recommended that these temporary roads be exempted based on their inclusion in the drainage control plans required by 30 CFR 816.42(a). This recommendation has been adopted and the definition has been modified accordingly.

4. One comment recommended a review of road criteria for roads used in construction. This recommendation has been accepted. The definition has been modified to exempt temporary pioneer or construction roads.

5. Several comments suggested that one category of roads be defined as those used for the transportation of coal. This was adopted for the Class I road definition. Several comments recommended that a separate category of roads be defined as those used by vehicles lighter than haul trucks on a regular basis, on the grounds that these roads are not used for transporting coal from a minesite and, therefore, result in a different degree of environmental and safety concerns. Several comments were received suggesting a class of roads consisting of those developed for and used irregularly by light-weight vehicles for a short period of time. Comments also were received emphasizing that small equipment roads used for less than one (1) year produced less environmental impact. Other comments suggested latitude be provided to allow for solutions to individual minesite needs. A six-month period was selected to differentiate between Class II and III roads to provide this flexibility.

6. The definitions comprise an integral part of the regulations relating to roads, and the reader is referred to the preamble discussion for Sections 780.37, 784.24, 816.150–816.176, and 817.170–817.176 for a discussion of issues which led to the definitions for roads in Section 701.5.

7. A comment argued against excluding roads maintained with public funds. However, OSM believes that even roads maintained with public funds, if they are within the permit area, must conform to applicable performance standards. For example, § 524 requires government-owned mine facilities, including roads at government mines, to comply with Title V of the Act. In addition, the Office does not want to create a loophole which would allow conveyance of a mine road to a municipality during mining to avoid applicability of the Act. The definitions address public roads separately under Section 761.5. The road regulations recognize the requirements of Section 522(c) of the Act in Sections 761.11(d), 780.33 and 784.18.

Safety factor. A commenter suggested an alternative definition for the phrase "safety factor." The current definition has been retained because it is consistent with that utilized in engineering texts, design manuals, and other regulations. See, for example, Sherard, J. L., et al. 1963, Earth and Earth-Rock Dams, John Wiley and Sons, Inc., page 339; Hirschfield, R. C. and Paulos, S. J., editors, 1973, Embankment-Dam Engineering, John Wiley and Sons, Inc., page 48; and Coates, D. F. and Yu, Y. S., editors. 1977, Pit Slope Manual, Chapter 9—Waste Embankments; Canada Centre for Mineral and Energy Technology, Canmet Report 77-1, page 71.

Sedimentation pond. 1. A few comments were received regarding the definition of sediment pond. A commenter thought that the definition should define sediment ponds only as the final structure controlling drainage from the permit area. This was rejected because what it suggests would, in part, circumvent the purpose of Sections 816.45 and 817.45 which encourages the use of a variety of sediment control measures which may be designed to keep sediment as close as possible to the disturbed area, and Sections 816.46(a)(2) and 817.46(a)(2) which require that sediment ponds be located ". . . as near as possible to the disturbed areas." The suggestion also could result in structures upstream of the primary pond being built which could avoid the design criteria aimed at safety and stability (Sections 816.46 and 817.46).

2. A few commenters suggested that the definition should be changed to specify which structure will require design and which one will not. It was not considered advisable to include a specific list which could be construed to be limiting. Such a list might conflict with Section 515(b)(10)(B)(i) which requires best technology currently available. However, the defini-

tion was revised somewhat to clarify what may constitute sediment ponds. Excluded from the definition of sedimentation pond by this change are small, secondary sediment control measures to the extent that they drain to a sedimentation pond. By this exclusion the Office does not mean that the design and effectiveness of these structures or practices should be unregulated. Sections 816.45 and 817.45 of this Chapter provide standards for their design and regulation which will ensure environmental protection while providing the necessary flexibility to the operator and his engineer.

3. Excluding these structures and practices from the definition of sedimentation pond does not mean that engineering design for them is inappropriate. Some of these structures and practices are the type used by operating personnel on a quick, field-judgment basis to solve a particular problem. Others will benefit from engineering design both to ensure maximum efficiency and safety and also to allow for calculation of the credit for reduction of the size of the sedimentation pond resulting from the particular structure or practice.

Significant, imminent environmental harm to land, air or water resources. 1. Section 701.5 provides guidance for the proper interpretation of the key phrase "significant, imminent environmental harm to land, air or water resources." The definition proposed and adopted is the same as the definition in the initial program. As stated in the preamble to the initial program definition (42 FR 62640-62641 (12/18/77)), it is important to keep in mind that this Section is not a true definition, because in each instance the key words of both the statutory phrase and the regulations are very general. Merely substituting one general word for another is not satisfactory as a complete definition. No definition of a general phrase such as this will remove all uncertainty or reduce field judgment to mere mechanics.

2. The exact language of the definition adopted was litigated before the U.S. District Court for the District of Columbia in the review of the interim regulations (*Surface Mining Litigation*, 456 F. Supp. 1301 (D.D.C. 1978)). In that opinion at page 1321 Judge Flannery stated:

"The court concludes that these standards (the identical definition now adopted) are sufficiently specific to strictly control government action in order to reduce the risk of erroneous deprivation.[22] The adequacy of those standards is further evidenced by an examination of similar standards that have geen upheld in other areas." (*Citation omitted.*) Footnote 22 states: "In reaching this conclusion, the court obviously disagrees with Peabody's assertion that the definitions in the regulations improperly broaden rather than specifically interpret the provisions of the Act."

3. The experience with the definition in the initial program has not shown that the definition has led to unjustified mine closures or abusive or illegal enforcement. Of the 2189 inspections conducted between May 29 and December 1, 1978, 458 have led to one or more Notices of Violations and 161 have led to Cessation Orders, the majority of which were for failure to abate.

4. Comments were received which fall into two main categories: (1) change the proposed definition to provide different standards within and without the permit area and (2) change the part of the definition addressing the word "substantial" to either strike the word "appreciable" or "immediately" or substitute other language. One such substitute is:

An environmental harm is significant if: (1) Its impacts are more than local in scope;

(2) Its continuation poses a serious environmental hazard to existing land, air or water resources; and

(3) Failure to abate it will have a long-lasting effect.

Changing the definition to provide different standards within and without the permit area raises serious difficulties. Both the statutory phrase and the proposed definition raise the possibility that even permitted mining would be stopped because of a "significant, imminent environmental harm." This result would be correct because the prohibition against such harms is clearly in addition to the performance standards. Nevertheless, it is clear that in all but the very unusal case, mining in compliance with the performance standards is not a "significant, imminent environmental harm." How to achieve this interpretation without unduly limiting the definition is the difficulty.

The way suggested by one commenter is to limit the definition of harm within the permit area to any "unexpected, abrupt and adverse impact." What they would add to the existing proposed definition is "unexpected and abrupt." Of those two words, "unexpected" may be the most closely aimed at the problem, but it in itself creates major problems. Unexpected to whom; what is one person's expectation may be unexpected by the regulatory authority.

OSM rejected the alternative of providing a different standard within and without the permit area. See also the preamble discussion to "Adjacent area" above. OSM will continue to deal with the concern that the standard not lead to cessation of routine mining otherwise in compliance with the performance standards in interpretive material to inspectors. It is worth noting that, in general, OSM, the States and the industry have found the definition and OSM's use of it adequate in practice to date. There have been no instances to the Office's knowledge of State or Federal inspectors attempting to utilize it in a fashion inconsistent with the intent of the Act.

5. The part of the definition dealing with the word "substantial" received the most comment. The proposed definition divided significance into two concepts: (1) a level of importance, and (2) the potential for repair. Both hurdles were set low. One synonym for "appreciable" is "measurable" and the timing of "reparability is "immediately." Other words could have been chosen, but OSM chose these words to indicate a low threshold for significance. As pointed out in the preamble to the initial program regulations, by the use of the word "appreciable" the meaning of the statutory word "significant" is not prejudged in any particular factual setting.

The most complete attempt to redefine "significant" set out above creates three hurdles, which, when one realizes they must all be overcome, is a higher hurdle than OSM believes Congress intended.

6. OSM made no change for the final regulations, while recognizing that the definition is not a perfect guide to the use of the cessation order powers. This preamble and guidance to inspectors, available to the States and industry, rather than a reworded definition, will be used to further clarify this important stautory phrase.

Slope. A commenter suggested that slopes should be defined as a ratio of horizontal to vertical distances because it is common usage in the construction industry. The comment is not accepted as the current method of stating slopes as vertical to horizontal is commonly accepted and used by MSHA and EPA and no confusion exists over current usage.

Soil horizons. This term is defined for use in topsoil handling and replacement and revegetation regulations, under authority of Sections 507(b), 508(a), 510, 515(b), 516(b), and 519 of the Act. 1. One commenter suggested adding "mineral" after "uppermost" in the definition of B horizon. These suggestions were accepted to make the definitions more closely coincide with the definitions in the USDA Agricultural Handbook No. 18, Soil Survey Manual, 1951 (as amended 1962), pp. 173-188.

2. Another commenter argued that the definitions of the A horizon were not accurate for some western soils.

The definition was changed, in response, to reflect that the A horizon is *typically* characterized by having the greatest amount of leaching. This same commenter argued that the definition of C horizon would more appropriately describe the D horizon. OSM has not changed the definition, because the definition of C horizon includes what was once included in the D horizon. See USDA Agriculture Handbook No. 18, Soil Survey Manual, 1951 (as amended 1962), p. 180.

Soil survey. One commenter suggested that this definition be moved to Section 701.5 from Section 785.17. OSM has accepted that comment. The definition remains substantively the same as the proposed regulation. The requirement that the survey must meet the National Cooperative Soil Survey standards was deleted from the definition for purposes of clarity only. These standards remain as the test for acceptable soil surveys. It is expected that all soil surveys conducted for the purposes of determining location of and reclamation plans for prime farmlands and for purposes of topsoil segregation and replacement will be conducted to meet these standards. For further discussion of the requirements for soil surveys, see the Preamble at Section 785.17(b)(1).

Special bituminous coal surface mines. No comments were received on this definition. It is modified from the definition in the proposed regulations by minor editorial changes for clarity. It is defined under authority of Section 527 of the Act and follows closely the language found there.

Spoil. No comments were received on the definition of this term and it remains unchanged from that in the proposed regulations. The definition follows closely the definition found in Grim, E. C. and Hill, R. D., at p. 218, 1976, Erosion and Sediment Control: Surface Mining in the Eastern U.S., EPA-615/3-76-006, p. 101.

Stabilize. A commenter suggested changing the word "control" to "prevent excessive or undesirable" in the definition of "stabilize." The suggested change has not been made because the word "control" is all-encompassing and therefore, the prevention of "excessive or undesirable" movement of spoil is implied.

State program. No comments were received on this definition and it is changed from the proposed regulation only by editing for clarity. It is based on the definition in Section 701 of the Act and is expanded to make clear that the State program must be approved by the Secretary and to clarify its applicability to Federal and Indian lands.

Steep slope. No comments were received on the definition of this term. It is the same, except for minor editorial changes for clarity, as the definition in the proposed regulation and in Section 515(d)(4) of the Act.

Subirrigation. (1) This term is defined because it is one of the major elements of the statutory definition of "alluvial valley floor," and is a critical element in the proper identification of alluvial valley floors under 30 CFR Section 785.19(c). Such identification determines whether the performance standards of Section 515(b)(10)(F) of the Act and 30 CFR Part 822, and the permit review criteria of Section 510(b)(5) and 30 CFR 785.19 (d) and (e) apply. The basis for this definition was set forth at 43 FR 41669 (Sept. 18, 1978).

(2) A commenter recommended that the definition be significantly modified, by defining subirrigation as a situation where water is supplied from beneath the surface in greater than "normal soil water levels." The commenter objected that the proposed rules' definition was overbroad because it included any situation where moisture was held in the soil, rather than limiting it to situations where the water held was more than that normally available. Paragraph (b) in the definition of subirrigation in 43 FR 41807 (Sept. 18, 1978) gives one of the identifying features as "increasing soil moisture from a portion of the rooting zone down to a saturated zone, due to capillary action." This part of the definition answers the commenter's concern. The term subirrigation is a function of the definition of alluvial valley floors where "water must be available for flood irrigation or subirrigation agricultural activities," and, therefore, the definition was not restricted as per the comments.

(3) A few commenters suggested the term "semi-saturated" be replaced by the phrase "capillary fringe" in the opening paragraph of the definition so as to eliminate semi-saturated zones from this definition. They argue for this change because water availability from semi-saturated zones may be below the wilting point of plants. The Office did not accept this suggestion, however, because the same holds true for water available in the "capillary fringe." (See Glossary of Geology, 1972, 1974, AGI, Washington, D.C., page 105.) Further, the use of the term "capillary fringe" would be unduly restrictive as it is often given the limit of extending no more than one meter above a saturated zone. Therefore, the inclusion of such a term would exclude a sizable percent of alluvial valley floors, because the capillary fringe can move below the root zone on occasion.

(4) A commenter thought that the five indicators listed in subparagraphs (a) to (e) of the definition should not be included, until extensive research demonstrated exactly which of the factors must be present for subirrigation to occur. Because subirrigation is a complex phenomenon, the criteria list is important to establish a basis upon which the regulatory authority will determine the existence of subirrigation. To state that a complex system should not be defined until "extensive" research is complete is certainly not sufficient reason to delete the list of known factors associated with subirrigation. Therefore, the comment was rejected.

(5) Several commenters wanted to delete the five indicators of subirrigation. And another commenter suggested that all five be required to be present to identify subirrigation. Overall, these commenters felt that the five indicators did not further define the term "subirrigation" and felt that the terms covered too many situations if each could be used separately as proof. Retention of the five indicators is justified in order to ensure that applicants know what sorts of indicators of subirrigation are to be considered. The five indicators may not each individually serve as conclusive proof of subirrigation in a given case, but together they give focus to the evaluation by the regulatory authority. If found in combination of more than one, conclusions can reasonably be drawn with greater confidence. Therefore, the indicators are retained in the definition.

(6) Another commenter recommended that the definition be modified to exclude upland vegetation located in "wet" soils. This comment is rejected because the differences between upland and valley floor vegetation are adequately accounted for in Section 785.19 (c)(2)(vi).

(7) Another commenter proposed limiting "subirrigation" to areas where a water table exists within 1.5 meters of the surface. This would mean that the capillary fringe would be within .5 meter of the surface, and would therefore restrict consideration of alluvial valley floors to those areas approaching swamp-like conditions which Congress clearly did not intend.

(8) One other commenter suggested adding the phrase "during moisture deficit months," to indicate that the subirrigation was supplying water for vegetation during low precipitation periods, and to eliminate swamps. While it is true that during the late summer the benefits of subirrigation are most obvious, it is also true that subirrigation is important for maintaining the vigor and density of a vegetative stand throughout the entire year. (See Hardaway, J. E., Kimball, D. B., Lindsay, S. F., Schmidt, J., Erickson, L., March 1977. Subirrigated Alluvial Valley Floors; A Reconnaissance of Their Properties and Occurrence on

Coal Resource Lands in the Interior Western United States (U.S. EPA, Region VIII, Denver, Colo.); Proceedings of National Coal Association and Bituminous Coal Research Symposium in Oct. 1977, pp. 61–135.) It also is true that subirrigation may not always occur on a given valley floor under all conditions, but that it may nonetheless be present during enough of the growing season to allow the planting of short term crops or the growth of substantially denser stands of native vegetation thereby making those lands more valuable for grazing or haying even though subirrigation may not be observed during some periods under certain conditions. Therefore, both of these comments were rejected as unjustified limitations on areas properly considered alluvial valley floors.

Substantially disturb. See the Preamble for the definition of "coal exploration".

Surface mining activities. A wide variety of comments were received suggesting changes and/or deletions in the text of the definition of surface mining activities.

1. Several commenters requested that the definition not include the provisions for "recovery of coal from a deposit not in its original location." These comments were rejected. OSM determined, through a study of the legislative history of the Act, that "coal refuse piles" are meant to be included within the Act's coverage. In order to provide consistency throughout all OSM regulations, the mining of coal refuse piles is included in the definition of "surface mining activities." Any other interpretation would be inconsistent with the purpose of the statute to "fully protect the environment." (Section 102 of the Act) (See also, the discussion in preamble to definition of "surface coal mining operations" in section 700.5.)

2. A commenter suggested adding "auger coal mining" to the definition in order to track more closely with the abandoned mined lands regulations. This comment was accepted.

3. A few commenters suggested adding specific language to the definition to cover timbering of the permit area prior to the removal of overburden or construction of facilities. OSM has determined that the removal of vegetation, or any pre-existing "material" located over the coal seams, is specifically intended to be covered by the definition of "surface mining activities." Any land mined for the purpose of coal extraction, i.e., for which the operator intends to file an application for a permit, may not be developed in terms of any activities construed under this definition by the regulatory authority to be incidental to the mining of coal. A change in the definition was, therefore, rejected as unnecessary. (See also preamble discussion of "surface coal mining operations" in section 700.5.)

4. A few commenters wanted the language of the definition amended to include the "removal of coal." This comment was rejected. Specification of the phrase "removal of coal" would have completely changed the meaning of the definition. As proposed, "removal of coal" was included in "surface coal mining and reclamation operations incident to extraction. . . ." along with all of the other activities ancillary to mining. To specify "removal" in this definition would imply that only removal, and not reclamation (and a host of other activities), is included in the definitions.

5. Several commenters suggested that the regulations contain a definition of the phrase "at or near the minesite" as the phrase is used in the definition of "surface coal mining operations" at Section 700.5. A commenter suggested using the word "adjacent" as a definition. Another suggested a 50-mile radius or a three-hour drive. Still another proposed using the word "contiguous." OSM considered each of these comments and is publishing no definition for the reasons set forth below. A related point was made in comments suggesting a definition of "coal processing plants" which is dealt with at the Preamble to those comments.

Each of the definitions proposed in comments is legally and practically inadequate. There is no justification for using the words "adjacent" or "contiguous" as a definition. They are either equally ambiguous as "at or near" or more restrictive. The test of 50-mile radius or 3-hour drive might achieve an acceptable result in a specific case but it seems arbitrary and unrelated to any of the policy or purpose underlying Pub. L. 95–87.

Publishing no definition has the advantage of leaving maximum flexibility for OSM and the State regulatory authority to determine the scope of the law on a case-by-case basis under the general principals contained in the key definition of the phrase "surface coal mining operation."

OSM's present interpretation of the general meaning of the phrase "at or near the minesite" is that the phrase modifies only the phrase "loading of coal for interstate commerce." Further, at present OSM interprets "at or near the minesite" to encompass most if not all loading facilities where the first loading for truck, rail or conveyor belt occurs. Its present interpretation would not bring within the regulation most intermediate loading facilities, such as the Baltimore, Md., port where coal is loaded for international commerce.

Suspended solids. This term is defined for use in the provisions of the regulations on sediment control. Several commenters felt that the proposed definition of suspended solids should not include a reference to a "0.45 micron filter." Others felt the filter should be larger. The reference to the filter size was deleted, in favor of reliance on test methods specified by USEPA. Sections 816.42(a) and 817.42(a) of the OSM rules provide that total suspended solids are to be determined according to collection and analytical procedures adopted by the Environmental Protection Agency's regulation for wastewater analyses (40 CFR 136). Thus, the definition was revised to reflect EPA requirements.

Temporary diversion. No comments were received on the definition of this term. It is changed by editing for clarity. It signifies the distinction needed between those diversions which will be eliminated at the end of mining and reclamation and those which will be retained as part of the approved postmining land use.

Theoretical detention time. See the Preamble for Section 816.46(c).

Topsoil. 1. Several commenters have suggested the definition for topsoil should be redefined to not include use of the term A horizon, but to include other best available soil materials with properties capable of attaining the proposed postmining land use. They point out that due to natural conditions such as sheet erosion, lack of profile development, etc., the soil A horizon may be very thin or absent. Where the surface soil present is suitable as a growth medium, even though not the A horizon, its use as topsoil should be allowed. The Act and the regulations allow for use of selected horizons other than the A horizon where they can be demonstrated to provide a growth medium equal to or better than the topsoil. The comments are rejected because the present definition does not, as comments implied, preclude the use of other materials when permitted by the Act.

2. The Act in Section 515(b)(5) makes the exception that where topsoil is of "insufficient quantity" or of "poor quality" for sustaining vegetation, or "if other strata" can be shown to be more suitable for vegetation requirements, the operator shall remove, segregate, and preserve such other strata which are best able to support vegetation. In Section 515(b)(6), the Act specifically requires that the the topsoil or "the best available subsoil which is best able to the support vegetation" shall be restored.

3. The regulations in Section 816.22 for topsoil substitution and supplements allow the substitution of selected overburden material for topsoil or as a supplement to topsoil where the

resulting soil medium can be demonstrated to the regulatory authority by physical and chemical analyses to be equal to or more suitable for restoring capability and productivity, and that it is the best available material to support and sustain the approved vegetation.

4. The intent of the Act with regard to substitution for topsoil is clear and is accurately spelled out in the regulations. The regulations provide the regulatory authority with the options that the commenters suggested. The definition of topsoil as the A horizon is no hinderance where it is too thin, too poor in qulaity, or missing altogether, because alternatives are clearly spelled out in both the Act and the regulations.

Toxic forming materials and *toxic mine drainage.* 1. These terms are defined to aid implementation of Sections 515(b)(3), 515(b)(5), 515(b)(10), 515(b)(14), 515(b)(17), 515(b)(22), and 515(b)(24) of the Act in the permanent regulatory program.

2. The basis for definitions of these terms is, first, Congress' recognition that control of toxic materials and drainage associated with surface coal mining and reclamation is an important element of the regulatory program under the Act. See e.g., H.R. Rep. No. 95-218, 95th Cong., 1st Sess., at 106 (establishment of revegetation), 107 (spoil handling), 111 (effects of mineralization of water on fish and wildlife), 114 (prevention of toxic drainage and isolation of overburden), 126-7 (underground mine drainage).

The basis for the explicit wording of the definitions is the commonly understood meaning of the word "toxic", as adapted within the context of coal mining. Toxic means a "poison". *Black's Law Dictionary,* at 1664 (1957 ed.); *Webster's New Collegiate Dictionary,* at 1236 (1977 ed.). Poison, in turn, means a substance that kills, injures, *or* otherwise impairs an organism. *Webster's supra.,* at 888. Thus, toxic-forming materials are defined to include materials associated with coal mining which may produce adverse effects on either biota or uses of water. Similarly, toxic mine drainage is defined to include water drainage from affected areas which is likely to produce adverse effects on biota in or using receiving waters.

3. Several commenters argued that the proposed definition of toxic-forming materials and toxic mine drainage conflicts with and should be changed to conform with the definition of "toxic pollutant" in Section 501 of the Clean Water Act (33 USC 1501). The Office does not agree with these comments. It finds neither a conflict between the OSM definitions and the Clean Water Act, nor a need to use the express language of the Clean Water Act.

The definition of toxic pollutant in the Clean Water Act was intended to be so general as to be susceptible of application to the entire range of industrial and public discharges regulated under the Clean Water Act, not just for coal mining. Thus, OSM has chosen definitions specifically adapted to only those activities regulated under Title V of the Act. Moreover, Congress contemplated protection of non-aquatic vegetation and terrestrial wildlife from toxics under the Surface Mining Act. These matters are not generally regulated under the Clean Water Act.

In any event, OSM finds no conflict between its definition and the definition of "toxic pollutant" at Section 501(13) of the Clean Water Act. OSM's definitions and the Clean Water Act place primary focus on a broad range of adverse results to organisms, and the OSM definitions are generally worded to accommodate any of the methods of exposure to organisms that are listed in Section 501(13) of the Clean Water Act. Finally, OSM and the Clean Water Act's definitions are both contained within regulatory schemes that require high levels of protecton of biota, without the necessity of use of complicated cost-benefit analysis to establish regulated levels of adverse substances. *See., e.g.; Hercules, Inc.* vs. *Costle,*——Fed——, Nos. 77-1248/1249 (D.C. Cir., Nov. 3, 1978) (Slip Op. at 32-41).

Unconsolidated stream-laid deposits holding streams.

1. A definition for the term "unconsolidated stream-laid deposits" is included in Section 701.5 because it is an integral part of the definition of "alluvial valley floors" which is found at Section 701(1) of the Act and Section 701.5 of the regulations. A specific definition of the term "unconsolidated stream-laid deposits" is necessary so that important aspects (e.g., mapping of such deposits) of the pre-application investigation (Section 785.19(c)(1)) may be carried out and so that a determination of the extent of any alluvial valley floor (Section 785.19(c)(2)) may be made by the regulatory authority.

2. Comments were received which expressed varying degrees of confusion with regard to the definition as it appeared in the proposed regulations. Editorial changes have been made in the definition in the final regulations in order to correct errors in the proposed regulations and also to provide further clarification.

The segment of the definition in the proposed regulations which referred to stream channels shown on standard USGS 1:25,000 scale topographic quadrangles was deleted because OSM does not consider use of such maps to define stream channels adequate for purposes of identifying potential alluvial valley floors. More specifically, the mapping of stream channels on these quadrangles is based on the judgment of a number of individuals interpreting aerial photos and does not necessarily rely on criteria used to define alluvial valley floors. In addition, the detail of such maps varies depending on the complexity and relief of the terrain being mapped.

3. The definition in the proposed regulations referred to streams with stream channels wider than 3 feet in bankfull width *or* 0.5 foot in bankfull depth. The word "or" was a typographical error in the proposed regulations. The word "and" has been substituted in the final regulations. It should be noted that channel depth alone is not considered to be an acceptable parameter by which to determine whether a stream is of sufficient size to provide for flood irrigation. Channel width may be a suitable parameter for such a determination in some cases; however, both channel depth *and* width are usually necessary (Linsley, R. K. and J. B. Franzini, 1972, Water Resources Engineering, McGraw-Hill, pp. 269-279; Chow, V. T., 1964, Handbook of Applied Hydrology, McGraw-Hill. pp. 21-46).

4. One commenter recommended that ephemeral streams be excluded from consideration in the definition. This recommendation was rejected because the Act extends alluvial valley floor protection provisions to all types of streams, perennial, intermittent, and ephemeral. Section 701(1) of the Act provides that "alluvial valley-floors means the unconsolidated stream-laid deposits *holding streams* where water availability is sufficient for subirrigation or flood irrigation agricultural activities . . ." (Emphasis added.) This definition in the Act makes no distinction with respect to the type of stream. In addition, as defined in H.R. Rept. No. 95-218, 95th Cong., 1st Sess, at 119 (1977), ". . . alluvial valley floors are the upper, near-horizontal surface of the unconsolidated stream-laid deposits which border perennial, intermittent, or *ephemeral streams.*" (Emphasis added.)

Underground development waste. No comments were received on the definition of this term. It is unchanged from the proposed regulations except for minor editing for clarity.

Underground mining activities. 1. A commenter suggested that the definition of underground mining activities be amended to include "in situ" processes and "auger mining" so that they will conform to the definitions in 30 CFR 837.5. The comment is accepted in part and the definition has been

changed to include "in situ" processes. "Auger mining" is included in the definition of "surface mining activities" which includes other mining techniques in connection with which auger mining usually occurs.

2. Another commenter recommended that the phrase "included but not limited to" to be added to the definition of "underground mining activities" immediately before the list of operations included in the definition. The recommendation was not accepted because the current definition accomplishes the same result and the addition would make no practical difference.

Undeveloped rangeland. 1. This definition is intended to clarify the meaning of the term as it is used in Section 510(b)(5)(A) of the Act, and Sections 785.19(e)(1)(i) and 822.12(a) of the regulations governing mining on alluvial valley floors. Congress did not define this term in the Act. As a result, in developing the Alluvial Valley Floor Identification and Analysis Guidelines (43 FR at 38039, 1978) in use during the initial program, the Office consulted with representatives of Western States regarding their interpretation of the term in the context of how they were applying or intended to apply it. 30 CFR Section 715.17(j). The general concensus was that the term should reflect the intention of the landowner, and that both "undeveloped rangeland" and developed rangeland were lands used for grazing but were not regularly tilled or mowed. Lands which are tilled are not commonly considered "rangeland." Therefore, the accepted distinction between developed and undeveloped rangeland turns on whether the land is being positively managed by the owner for uses commonly associated with rangeland, e.g., grazing. If the owner has fenced an area for the purpose of regulating stock access to the vegetation, as is often true of comparatively lush subirrigated areas on alluvial valley floors in order to prevent overgrazing, then the area would be managed to maximize the value of the resource and would not be considered "undeveloped rangeland." Although this example illustrates the intention of the Office with respect to an obvious application of the definition and the factors from which it is derived, the Office chose not to write the definition exclusively in terms of fenced control of stock access because it did not believe there was sufficient information available to exclude other possible distinctions between developed and "undeveloped rangelands."

2. A few commenters suggested changing the definition to include those lands "not specifically improved." This was rejected because it would not add clarity but would introduce further ambiguity by the lack of any clear meaning for the word "improved." The Office also believes this would narrow the term by potentially excluding fenced areas as not "improved." Therefore, no change was made in the definition.

Upland areas. 1. A definition of the term "upland areas" is included in Section 701.5 because it represents an important exclusion in the definition of "alluvial valley floors" which is found at Section 701(1) of the Act and at Section 701.5 of the regulations. A working definition of "upland area" is needed so that appropriate mapping may be carried out per the requirements of the preapplication alluvial valley floor investigation required by Section 785.19(c)(1).

2. A commenter recommended a number of changes in the language of the definition of "upland areas." The Office utilized these suggested language changes to clarify the definition. More specifically, the definition in the final regulations now emphasizes that upland areas are ". . . those geomorphic features located outside the flood plain and terrace complex . . ." The commenter suggested that the definition of "upland areas" also include "higher terraces." The Office considers that inclusion of this term in the definition, with no further clarification, would exclude some terraces which should be included in alluvial valley floor areas. The term "higher terraces" is used in the definition of the final regulations; however, it is qualified by the word "isolated." This limitation on "higher terraces" in the definition is intended to provide for appropriate exclusion of geologically ancient terraces which were not formed in association with the present alluvial system. This concept is consistent with that included in the Alluvial Valley Floor Identification and Analysis Guidelines (43 FR 38039), and with Congress' intent to protect only those unconsolidated stream-laid deposits which are part of a modern valley floor system.

3. The final regulations have added the terms "mud flows" and "debris flows" to the definition of "upland areas" to further describe the types of deposits which may overlay geomorphic features located outside the floodplain and terrace complex. In addition, these terms are representative of colluvial deposits (American Geological Institute, Glossary of Geology, 1972, at 140) which, as specified in the definition of "alluvial valley floors" in Section 701.5, overlay upland areas. Similarly the term "windblown material" has been added to the definition of "upland areas" to provide a more comprehensive description of deposits which may cover highland areas and also to provide consistency with the definition of "alluvial valley floors" in Section 701.5 of the final regulations.

Valley fill. See the Preamble for head-of-hollow fill.

Vines. A commenter proposed a definition for "vines." This was rejected. The term is commonly used.

Water table. No comments were received on the definition of this term, and it is unchanged from that of the proposed regulations. The definition follows closely those found in American Geological Institute, Glossary of Geology, 1974, pg. 787, and Webster's New Collegiate Dictionary, 1977, Merricam Co., pg. 324.

Woody plants. A commenter suggested deleting the definition of "woody plants" from Section 816.116(d)(3) and moving it to Section 701.5. Since the defintion of "woody plants" is limited in use to Section 816.116 there is no need to move the definition to Section 701.5.

§ 701.11 Applicability.

1. Authority for this section is found in Sections 102, 201, 501, 502, 506, 512, 515, 516, and 523 of the Act.

2. Proposed Section 701.11(a) has been revised and split into Sections 701.11(a), (b) and (c) in the final rules to differentiate applicability of the regulations for State or Federal programs and Federal lands programs. Proposed Section 701.11(b) has been revised and redesignated as Section 701.11(d). A new Section 701.11(e) has been added to address the applicability of the permanent program regulations to existing nonconforming structures. Proposed Sections 701.11 (c) and (d) have been combined in redesignated Section 701.11(f) dealing with coal exploration.

3. Section 701.11(a) implements the statutory authority in Sections 502 and 506 of the Act. Any person conducting surface coal mining and reclamation operations eight months after the effective date of a State program or implementation of a Federal program must have a permit unless the conditions in 30 CFR 771.13(b) are met. The permit requirements of the permanent program are the focal point of the permanent regulatory program and trigger the applicability of the performance standards for surface coal mining operations conducted under a State or Federal program.

4. Sections 701.11 (b) and (c) reflect changes made due to comments on the proposed application of the regulations to Federal lands. Comments were received suggesting that the proposed regulations regarding applicability of the Federal lands program to existing operations could create an administrative burden. They questioned the advisability of requiring new permits on Federal lands within eight (8) months following the effective date of the

Federal lands program. The commenters suggested that new permits for existing operations on Federal lands should not be required until a State program has been approved.

OSM considered the alternative raised by the commenter. It determined that this provided a more logical and consistent implementation schedule than would have occurred were the proposed regulations adopted as final on this subject. The language in Section 700.11(b) reflects decisions made and incorporated into Subchapter D of the regulations. The regulations now require that existing operations on Federal lands comply with the permanent program performance standards within six (6) months. If the regulatory authority determines that revisions of existing approved mine plans are necessary, such revisions must be completed and compliance with the particular performance standard must be obtained within one (1) year of the effective date of the Federal lands program. A new permit will not be required for existing operations on Federal lands until eight (8) months following approval of a State program or implementation of a Federal program. Applications for new mines or to expand the acreage at existing mines must comply with requirements in Subchapter D after the effective date of that Subchapter. A more detailed discussion of these issues may be found in the Preamble of Part 741 of these regulations.

5. A commenter suggested that the statutory exemptions found in Section 528 of the Act should be reiterated in Section 701.11 of the regulations. OSM did not accept this suggestion because the exemptions referred to by the commenter are specified in Section 700.11 of the regulations. They are located there because these exemptions apply to the initial regulatory program as well as the permanent regulatory program. If the exemptions were specified only in Section 701.11, they would be considered to apply only to the permanent program.

6. A commenter suggested that Section 701.11(a) should provide that persons shall cease surface coal mining operations within four (4) months if a State has not made a decision on the permanent program application required to be filed within two (2) months following approval of the State program. This alternative would limit the period of time following approval of a State program during which an operator could continue to conduct operations under a permit issued during the initial program.

OSM considered this alternative along with that in the proposed regulations. Section 506(a) sets no time limit upon continued operations under an initial program permit provided a timely application has been made for a permanent program permit and the initial administrative decision has not been made on that application by the regulatory authority. The statutory language does leave an open-ended period of time during which an operator may continue to operate under an initial program permit provided the conditions are met. While this could be subject to abuse, OSM believes that leeway must be left with the regulatory authorities because of the varying workloads which will occur from State to State. Because of the number of applications for permits in some States, decisions on all of them by the regulatory authority within six (6) months may be physically impossible. OSM sees a remedy for any potential abuse in its authority under Section 521(b) of the Act authorizing the Secretary, after following stated procedures, to assume permitting functions within the State under procedures in 30 CFR Part 733. This should be sufficient to prevent continued long-term operation under initial program permits following the 8-month period after approval of the State program prescribed in the Act.

7. Comments were received urging OSM to clarify in the regulations the permit transition process for initial program permits which might be up for renewal shortly before or after approval of a State program or implementation of a Federal program or Federal lands program or for pending permit applications submitted during the initial regulatory program which had not been acted upon by the regulatory authority at the time of approval of a State program or implementation of a Federal program or Federal lands program. Examples were given of mine plan applications on Federal lands which may be submitted months in advance of implementation of the Federal lands program, but, because of their complexity, the State and Federal interagency reviews required under cooperative agreements and the possible need for preparation of environmental impact statements, had not been acted upon by the time of approval of a State program or implementation of a Federal program. The commenter was concerned that following implementation of a permanent program the regulatory authority might discontinue processing applications filed under the initial program, thereby resulting in months of wasted effort, and a possibly lengthy hiatus period during which the applicant would have to revise the permit application in accordance with permanent program requirements and await initiation of the permit review and decision process by the regulatory authority on that revised application.

OSM has considered these comments and recognizes that the transition between initial and permanent program permitting requirements may cause some delay but believes these will be minimal. Careful business judgements will have to be made by operators concerning the timing of permit applications and whether to submit them under initial or permanent program standards. OSM does not believe that regulations can depart from the Act's requirements or grant variances where not contained in the Act.

Operators receiving new or renewed initial program permits prior to approval of State program or implementation of a Federal or Federal lands program will have to apply for permanent program permits on the time schedule required by the Act and regulations. Of course, if initial administrative decisions are not made on the permanent program permits within six (6) months after the application deadline, operators may continue to operate under initial program permits if conditions in 30 CFR 741.11(d) or 771.13(b) are met.

OSM does not believe applications under the initial program which are pending upon the effective date of State program approval or Federal or Federal lands program implementation can be approved under the initial program. Instead, those applications will have to be supplemented by any additional filing requirements imposed by the permanent program regulations. The regulations do not require an entirely new permit application if information and justifications submitted with an initial program permit application satisfy permanent program requirements.

In the case of an initial program permit with a renewal date following approval of a State program or implementation of a Federal program or Federal lands program, particularly during the two-month period between approval of a State program or implementation of a Federal program and the permanent program permit filing date, operators may want to file for renewals sufficiently in advance of the permanent regulatory program so that the renewal can be granted before the permanent regulatory program effective dates. OSM believes that operators can continue to operate under initial program permits which would be due for renewal after filing, but before obtaining a permanent program permit if the conditions in 30 CFR 741.11(d) or 771.13(b) are met. For additional discussion of the mandatory schedule for new permits, see the Preamble to Part 771.

§ Section 701.11(e)

Statutory authority is found for regulations dealing with existing nonconforming structures in Sections 102, 201(c)(2), 501(b), 508, 515, and 516.

The Office of Surface Mining in the preamble to the proposed regulations at 43 FR 41735 (September 18, 1978) discussed alternative ways for regulating existing nonconforming structures (referred to as "existing structures" in the regulations) under the permanent regulatory program. Four alternative approaches were generally described and the types of structures which could be subject to existing nonconforming structure requirements were listed. Public comment on the issue was encouraged. In response to this discussion in the preamble to the proposed regulations many comments were received. These comments have been carefully analyzed, the environmental consequences of regulating existing nonconforming structures in a manner requiring reconstruction in certain instances has been considered in the final environmental impact statement (OSM-EIS-1, FES 79-3, January 29, 1979, at pp. B-III-125-128) and the cost impacts of alternative regulatory schemes analyzed in the final regulatory anaylsis. Based on this analysis, regulations pertaining to existing nonconforming structures have been included in Sections 701.5, 701.11(e), 741.11, 780.12, 784.12, and 786.21.

Regulations addressing existing nonconforming structures are necessary in order to put persons on notice of the effect of permitting and performance standards on such structures. In the absence of such specific regulations, persons conducting surface coal mining operations would be required in permit applications to submit for existing structures the information and plans required for new structures to demonstrate compliance with the performance and design criteria in Subchapter K. Compliance with such criteria on non-Indian and non-Federal lands would be required when the permanent program permit was issued under Subchapter G, or on Federal lands within six months of the effective date of the Federal lands program under Subchapter D.

Generally, the regulatory system for existing nonconforming structures adopted in the permanent program regulations for State or Federal programs provides for a carefully controlled decision on reconstruction of existing nonconforming structures which allows up to six months following issuance of permits for this reconstruction. This approach has certain similarities to that implemented in the initial program regulations, 30 CFR 710.11, which, with respect to allowing a time period for reconstruction of nonconforming structures, was upheld by Judge Flannery in the U.S. District Court for the District of Columbia during litigation challenging the initial program regulations. *In Re Surface Mining Litigation* 452 F. Supp. 327 (D.D.C. 1978). The permit application and approval process, which is part of the permanent program regulations, provides certain distinct advantages in terms of regulating existing nonconforming structures over that which was available during the initial program.

The purpose of the regulations in Sections 780.12 and 784.12 is to require the applicant for a permit to submit sufficient information to demonstrate that he or she is either entitled to an exemption from reconstruction requirements or, that if he or she is not entitled to such exemption, reconstruction can occur within six months without significant harm to the environment or public health and safety. The regulations provide an exemption from reconstruction requirements if the applicant can demonstrate and the regulatory authority finds (1) that the existing structure complies with performance standards in the initial program, which standards are at least as stringent as the comparable standards for the permanent program, (2) that the existing structure complies with a more stringent permanent program performance standard, or (3) in the case of a new performance standard in the permanent program with no comparable standard in the initial program, that the existing structure complies with the permanent program performance standard. In essence, if the existing structure complies with permanent program performance standards, the applicant need not reconstruct the structure in order to comply also with permanent program design requirements.

As noted in the environmental impact statement, this approach may over the long-term have certain environmental and public health and safety risks associated with it. This is because the probability of compliance with the performance standards over the life of the structure is not as high if the structure has not been built to minimum design standard levels. On the other hand, this exemption does eliminate short-term adverse environmental impacts associated with reconstruction of existing structures, many of which may be stable and covered or surrounded by mature vegetation following years of use. In addition, it eliminates costs which would be associated with reconstructing the structure in order to comply with design criteria.

If an applicant proposes to continue to use an existing structure which is in compliance with an initial program performance standard that is less stringent than the permanent program performance standard or is not in compliance with a permanent program performance standard, the applicant must obtain approval from the regulatory authority to reconstruct that structure under a schedule calling for completion within six months or less. If the regulatory authority finds that reconstruction or modification will result in significant risks of harm to the environment or public health and safety, the applicant would be required to abandon the structure under permanent program requirements for cessation of operations, 30 CFR 816.132, and 817.132. In making the judgment as to the significance of the harm which could result from reconstructing a nonconforming structure, the regulatory authority will have to weigh that harm against the impacts which could occur during abandonment of the structure and construction of a new structure to be used to fulfill the same function. The reconstruction compliance schedule which would become part of the approved permit would be closely monitored by the regulatory authority and enforcement actions taken for failure to meet any interim steps which might be included in the reconstruction schedule. Naturally, some short-term environmental impacts would occur from reconstruction of existing facilities. However, because of the schedule for reconstruction which could allow up to six months for that purpose, the environmental impacts can be minimized by careful planning and scheduling of work, taking into consideration availability of equipment, personnel, and weather conditions. The schedule for reconstruction also helps to reduce the cost of such reconstruction, again by allowing for careful planning and scheduling of equipment and personnel.

1. Some commenters suggested that all existing structures should be required to comply with the permanent program performance standards upon the effective date of those standards. These comments are based on the rationale that the Act permits no variances for existing nonconforming structures and that they must comply at the time the performance standards become effective as would any aspect of a surface coal mining operation. Judge Flannery, in his May 3, 1978, opinion on surface mining litigation, noted that "It is clear that the Act empowers the Secretary to regulate pre-existing nonconforming structures and facilities that are part of surface coal mining operations under Section 701(28)(B). It will be emphasized that pre-existing nonconforming structures and facilities must still comply with

the performance standards of the Act and the regulations."

Commenters supporting the immediate compliance alternative reasoned that the industry will have sufficient lead time and knowledge of the permanent program performance standards to reconstruct their structures prior to application of the permanent program performance standard. They suggest that the industry will know when the permanent program performance standards are published what the performance and design standards will be. Essentially, the same standards will have to be met in an approved State program they argue.

This approach to existing nonconforming structures has the most immediate beneficial effect on the environment in terms of complying with permanent program performance standards. However, as the environmental impact statement points out, reconstruction of pre-existing nonconforming structures will have associated short-term adverse environmental consequences.

As the regulatory analysis shows, the cost implications in terms of lost production of this alternative are the highest. Operators would have to have all existing nonconforming structures reconstructed by the time a permit was issued. They would not have a six-month period in which to plan for and schedule personnel and equipment to reconstruct nonconforming structures. This alternative could also result in temporary reduction in coal production because operators would have to divert sufficient equipment and personnel to reconstruct existing nonconforming structures prior to producing coal under a permanent program permit.

OSM rejected this approach due to its costs to the operator and in terms of lost production. The nature of the environmental impacts likely to occur over a six-month compliance period are not so great as to merit imposition of these costs.

2. Some commenters suggested another conceptual approach to regulating existing nonconforming structures. This approach could be characterized as the informal case-by-case determination made after discussions between the regulatory authority and the operator. Commenters suggested that the regulations could state simply that if an existing structure on the mine site did not meet the performance standards or made the operator's compliance impossible, that the operator and regulatory authority should agree on what should be done with the structure. In line with this approach, a commenter suggested the following language: "Any pre-existing structure which does not meet, or which prevents compliance with a performance standard of this Part must be redesigned or replaced so that such standard is met." Another commenter suggested that the operator should be required to submit a list of structures to the regulatory authority and then in a conference with the regulatory authority decide the proper course of action on an item-by-item basis.

OSM has considered this alternative and rejected it. The commenters reasoned that OSM should not prescribe a cookbook approach but should write a flexible regulation giving broad discretion to the regulatory authority to determine what should be done with each existing structure. OSM believes that the regulations as adopted allow the appropriate level of flexibility consistent with the purposes of the Act to establish a uniform national regulatory program with minimum standards for protection of the environment and public health and safety. Existing nonconforming structures can pose a significant risk of harm to the environment or public health and safety. OSM believes it has an obligation to specify certain demonstrations and findings which must apply uniformly to the regulation of existing nonconforming structures in order to ensure the uniform national level of protection contemplated by Congress.

3. Some commenters suggested that existing structures should not have to be reconstructed to meet permanent program design requirements if they complied with the permanent performance standards. The commenters pointed out that reconstruction of stable, revegetated structures could cause environmental harm. If the structure met the permanent program performance standard, reconstruction to meet the design standards should not be required because of the potential harm to the environment and the cost of the operator in terms of money and delays in coal production.

Commenters also point to Judge Flannery's decision on the initial program regulations. Judge Flannery concluded from his analysis of the initial program regulations covering pre-existing structures, that OSM could not require reconstruction of existing structures for the sake of complying with design requirements if the structure already complied with the performance requirements.

OSM considered the approach suggested by these commenters and the alternative of requiring reconstruction of existing structures to meet design requirements even when they met performance requirements. The latter approach is attractive because of the increased level of confidence that a structure built to specific design requirements in the regulations will be more likely to remain in compliance with performance standards throughout the life of the structure. Furthermore, built to specific design requirements, the structure would be less likely to fail under particularly stressful situations. Depending on the type of structure and its location, failure could have adverse consequences on the environment and public health and safety.

Balanced against these considerations, OSM has considered Judge Flannery's holding referred to above. His holding rested upon the principle that for a regulation to have retroactive application, Congress must have explicitly specified such. Judge Flannery noted that Section 515(f) referred to *existing* and new coal mine waste piles, whereas Congress has not specified that other performance standards apply to existing structures.

OSM also considered the points made by commenters who suggested that reconstruction of stable, revegetated structures could cause adverse environmental impacts. Although the environmental impact statement characterizes these impacts as generally short-term, they may outweigh the benefits to be gained by reconstructing a structure so as to meet design requirements when it already is in compliance with performace standards. The added long-term confidence in a structure built to specific design requirements, OSM believes, is not sufficient justification to incur the environmental impacts which could arise from reconstruction. This is particularly so when one recognizes that through periodic inspections of the structure during its useful life, the regulatory authority will be able to ensure its continued compliance with performance standards or correction of a condition threatening harm to the environment or public health and safety by ordering any necessary maintenance or reconstruction when the need becomes evident.

In response to commenters on this issue, OSM has decided not to require reconstruction of a structure to meet permanent program design requirements if the structure complies with: (1) initial program performance standards which are at least as stringent as comparable permanent program performance standards, (2) more stringent permanent program performance standards or (3) permanent program performance standards for which no comparable initial program performance standards existed.

If an existing structure must be reconstructed because it does not comply with permanent performance standards which are more stringent than initial program performance standards or for which no comparable performance standards existed in the initial program, the issue arises as to whether it should be reconstructed to

meet only the performance standards or also meet the design requirements. In this case modification or reconstruction, with its associated environmental impacts will have to occur, to obtain compliance with the performance standard, unless the operator chooses to abandon the structure. Given this, OSM believes that the long-term benefits of modifying or reconstructing to meet the design requirements discussed above outweigh any added short-term environmental impacts which might be identified with reconstructing to meet only performance standards and, therefore, has required reconstruction to meet design standards in the regulations.

4. Another issue raised by commenters is when existing non-conforming structures should be required to come into compliance. Suggestions included: (1) immediately upon issuance of a permanent program permit, (2) up to six months following issuance of a permit and (3) a time period agreed to by the regulatory authority and the operator on a case-by-case basis. The regulatory analysis considers the costs associated with a 2 year reconstruction period.

Immediate compliance is arguably required by the Act. The Act gives no waiver from compliance with performance standards for existing structures. Rather, Section 515(a) says that permits for surface coal mining operations shall require that such operations meet all applicable performance standards. Existing structures include the structures and facilities which fall within the definition of surface coal mining operations in Section 701(28) of the Act.

Immediate compliance with the permanent program performance standards would have the most positive environmental consequences. Unless authorized to continue operations under an initial program permit pursuant to 30 CFR 771.13(b), the adverse impacts from non-conforming structures would end within eight months of approval of a State program or implementation of a Federal program when a permanent program permit is issued and Subchapter K becomes applicable. This would be approximately February 1981, three-and-a-half years after Congress enacted the Surface Mining Act expressing the urgent need to establish a uniform national regulatory program to end the environmental abuse and risk to public health and safety which had been associated with coal mining. Arguably, Congress intended no further delay in bringing existing operations into compliance.

Also supporting this alternative is the argument that operators will have ample lead time to reconstruct nonconforming structures before their permanent program permits are issued. With publication of these rules operators will be put on notice as to what will be required for existing nonconforming structures. With approval of a State program or implementation of a Federal program they will again be on notice, perhaps in even more detail. They are not required to have a new permit for eight more months and even this may be extended under 30 CFR 771.13(b). Seemingly, reconstruction of nonconforming structures could reasonably be expected over this period of time.

The cost to the operator of immediate compliance would be the greatest of the alternatives considered. These costs would be in terms of dollar costs of diverting the equipment and personnel to reconstruction tasks and a temporary drop in coal production. (See the final Regulatory Analysis.) These costs could be particularly significant if the operator, in exercising his or her business judgment, felt constrained to await approval of the State program or even discussions with the regulatory authority following filing of the permit application. This might be necessary in order to know precisely what structures required reconstruction and to what specific design requirements.

An alternative to immediate compliance is to require reconstruction over a specified period not to exceed six months following permit issuance. This approach delays elimination of environmental impacts or risks to public health or safety which may be associated with a structure that is not in compliance with the permanent program performance standards. However, the magnitude or such impacts should not be great over the reconstruction period. Should the nonconforming structures pose a significant imminent environmental harm to land, air or water resources, or an imminent danger to the health and safety of the public, the threat could be handled by issuance of a cessation order. Cessation orders are not limited to violations of permits or performance standards, but can be issued for any practice or condition which poses the requisite risks.

As discussed above, if many operators in the exercise of business judgment would not begin to reconstruct existing nonconforming structures until approval of a State program or implementation of a Federal program at the earliest, the maximum six-month period for reconstruction after issuance of a permit would allow for careful planning of equipment and personnel needs as related to coal production schedules, seasonal weather patterns and other factors. In addition, for mines with many structures requiring reconstruction, the work could be scheduled in the optimum sequence to minimize impacts upon the environment and coal production. When compared to the immediate compliance alternative, the planning and scheduling which could occur over the six-month reconstruction period could mitigate some of the adverse impacts of reconstruction. This could offset in part the harm to the environment which would result from permitting a delay in meeting the permanent program performance standards.

The other alternative suggested by comments with respect to the timing of reconstruction would leave to the regulatory authority and the applicant agreement on what structures required reconstruction by any particular time. This would give maximum flexibility to consider the particular situation relating to each structure. The magnitude of the reconstruction task could be considered in light of the potential harm it posed to the environment and public health and safety. Reconstruction schedules could be designed taking fully into account the seasonal factors.

One difficulty with this approach is the administrative burden it would place upon those regulatory authorities in states with a significant number of mines. The sheer number of individual negotiations with each operator and the time consumed would divert personnel from other essential functions such as inspections and enforcement. In addition, the total flexibility which this approach would allow could result in failing to achieve one of the fundamental concepts in the Act, a uniform minimum national regulatory program across the country. The flexibility could result in competitive advantages for the coal industry within one State when compared to another, a result Congress was intent upon avoiding.

The environmental consequences of this alternative are not readily assessed. A natural tendency would probably be to give operators a fixed period, such as six months or more, to reconstruct nonconforming structures. Delay in bringing nonconforming structures into compliance with the permanent performance standards would prolong the adverse impacts associated with such nonconformance. Because of these impacts, a two-year reconstruction period seems unreasonable, given the purposes of the Act and the built-in lead time in the regulations.

The effect on costs and coal production of this alternative would be most favorable to the operators. Successfully negotiating lengthy reconstruction periods would be to the operator's benefit by permitting more gradual assignment of equipment and personnel to reconstruction. Reconstruction ac-

tivities would be less likely to interfere with coal production on this basis.

OSM believes the alternative of allowing up to six months for reconstruction of existing nonconforming structures is the most reasonable approach to take. It reflects the need to bring structures into compliance with the full complement of performance standards within a reasonably prompt period of time. Significant harm to the environment or public health or safety over this period of time can be handled by issuance of cessation orders. Finally, this approach is consistent with Judge Flannery's opinion in *In Re Surface Mining Litigation* when he held that permitting a reasonable time period for reconstruction was a proper exercise of the Secretary's discretion. Under Section 786.21(a)(2)(i), the structure must be in compliance six months after issuance of the permit submitted pursuant to the permanent program regulations. Normally, less than six months will be required for reconstruction of structures, such as sediment ponds, haul roads, and division ditches. For those exceptional structures which would require more than six months for reconstruction, operators should consider initiating reconstruction plans in accordance with these regulations prior to approval of a State program or implementation of a Federal program.

OSM does not intend that blanket six-month reconstruction periods be granted for all non-conforming structures. Smaller, less complex structures could be approved for reconstruction under a schedule providing less than six months. Other factors, such as severe environmental impacts resulting from continued non-compliance, could also be a basis for a reconstruction schedule of less than six months. OSM essentially agrees with a commenter who suggested that existing nonconforming structures should be modified or reconstructed on the most expeditious schedule possible.

5. A commenter suggested that an existing structure which was not in compliance with initial program performance standards should not be given any additional time after issuance of a permanent program permit to come into compliance. Operators were to have brought existing structures into compliance with the initial program performance standards by November 4, 1978. (30 CFR 710.11). Failure after that date to be in compliance would be a violation of the regulations. Certainly, by the time the permanent program performance standards become applicable operators will have had ample time to bring existing structures into compliance with the initial program performance standards.

OSM agrees with the position and rationale of the commenter. Section 502 of the Act requires compliance with specified performance standards in Section 515 during the initial program. OSM believes, given the time which will have elapsed between required compliance of existing structures with the initial program performance standards and issuance of permanent program permits, that permanent program permits should not be issued to an operator having structures not in compliance with initial program performance standards. 30 CFR 701.11(e)(iv) is written to require operators to modify or reconstruct structures not in compliance with initial program performance standards to meet more stringent permanent program design and performance standards before a permanent program permit can be issued. This is consistent with the rationale which supports OSM's determination that existing structures not meeting the Subchapter K performance standards be reconstructed to meet both the design and performance standards of Subchapter K.

6. Commenters suggested that OSM should define what is included within the term existing structure so that operators will be on notice. A commenter suggested that existing structures should be those designed and made a discernable part of a permit before March 4, 1978, or those for which construction was initiated before that date.

OSM agrees that existing structures should be defined, but does not agree with the suggested definition. That definition would cover only those structures that "existed" before the initial program became applicable. Under the suggested approach, any structure which was created between March 4, 1978 and the approval of a State program or implementation of a Federal program would not be covered by the existing structure concept and presumably, not have the additional time to be modified or reconstructed to meet permanent program requirements.

OSM believes, and has so defined, existing structures to include those structures for which construction began prior to approval of a State program or implementation of a Federal program or Federal lands programs. Structures built between March 4, 1978 and the permanent regulatory program implementation were built in accordance with initial program performance standards and may not be in compliance with more stringent or comprehensive permanent program standards. The Act requires compliance with all the standards in Sections 515 and 516 regardless of when the structure was built. OSM, by the manner in which it defines existing structures, cannot exempt from permanent program requirements of Sections 515 and 516 those structures built in compliance with initial program standards.

7. Some commenters made suggestions on the control mechanisms which should be incorporated in the regulations to ensure that only truly non-conforming structures would be given an extension of time within which to be brought into compliance and that such structures were, in fact, reconstructed or modified on schedule. Demonstrations to be made by the applicant and corresponding findings by the regulatory authority were suggested. A compliance schedule, to be incorporated into the permit covering the period for reconstruction or modification, was recommended. The commenters suggested such a schedule could include interim steps, which if not met, could constitute a violation of the permit terms.

OSM believes the suggestions have merit. In contrast to the initial program, the permanent program includes comprehensive permitting requirements to assist the regulatory authority to determine if reclamation is feasible at a given mine. As part of the reclamation and operation plans for surface and underground mines in 30 CFR Part 780 and 784, the application must include a description of each existing structure and compliance plans for reconstruction of modification of those structures. 30 CFR 780.12 and 784.12. No application for a permit which proposes to use an existing structure may be approved by the regulatory authority unless the applicant demonstrates and the regulatory authority makes certain findings identified in 30 CFR 786.21.

As part of the permit approval process, the regulatory authority must approve a compliance schedule for reconstruction of modification of all existing structures to be used for, or to facilitate surface coal mining and reclamation operations during the permanent program. The regulations do not preclude the regulatory authority from insisting upon a compliance schedule containing interim steps for reconstruction or modification. Under this regulatory approach which does not require immediate compliance with the requirements of Subchapter K for existing structures, OSM believes that an operator's progress toward compliance during the grace period should be closely monitored. A compliance schedule containing the interim steps for compliance would be one mechanism to assist in attaining this objective.

As suggested by commenters, failure to meet a compliance schedule would be a violation of a permit term for

which appropriate action could be taken under 30 CFR Subchapter L. Because of the continued environmental impacts and threats to public health and safety which could be associated with non-conforming structures, failure to meet a scheduled step in bringing the structure into compliance, which could jeopardize ultimately obtaining compliance on schedule, should rightfully be subject to appropriate enforcement action.

8. A commenter suggested as an alternative to a compliance schedule and use of enforcement tools, that the regulations call for filing of a bond by the operator to ensure reconstruction or modification. OSM considered this but did not accept it. A bond of this type could increase the financial burden upon permit applicants without significantly improving the regulatory authority's ability to ensure compliance. If an operator intends to produce coal under a permanent program permit, the enforcement tools available to the regulatory authority to ensure that the compliance schedule in the approved permit is met are sufficient incentive, OSM believes, for the operator to properly and completely reconstruct or modify an exisitng nonconforming structure.

9. Comments noting the adverse environmental impacts which can be associated with reconstruction or modification of existing structures or suggesting a limited time period within which to bring the nonconforming structure into compliance raise a common issue. What must be done with the structure if its reconstruction would cause a significant threat of harm to the environment or to public health or safety or if its reconstruction could not be accomplished within six months? OSM has decided that the only reasonable option is to require abandonment of the structure and, if necessary, construction of a new conforming structure. Abandonment would be required to proceed under 30 CFR 816.132 or 817.132.

Given the purposes of the Act in Section 102, OSM does not believe regulations implementing the permanent regulatory program can authorize the regulatory authority to approve reconstruction or modification which would pose a significant risk or harm to the environment or public health and safety. Indeed, by definition, such reconstruction or modification would well be subject to a cessation order under Section 521 of the Act. Similarly, OSM does not believe that the regulations should permit the impacts associated with non-conforming structures to continue longer than six months. Considering that the Act could be read to require immediate conformance of existing nonconforming structures, OSM believes that a requirement to bring such structures into conformance within six months or abandon the structure is a reasonable exercise of its responsibility to protect the environment and the public health and welfare from the adverse affects of coal mining—in this instance, nonconforming structures associated with coal mining.

10. Some comments pointed out the need to distinguish between design and performance standards in the regulations. Because compliance with performance standards is one of the criteria for determining whether modification or reconstruction is necessary under the permanent program, OSM agrees that persons conducting surface coal mining operations and the regulatory authority need to know which are performance standards and which are design crtieria. OSM believes that the performance standards in Subchapter K are distinguishable from the design standards as the regulations now are written. OSM will provide advice on this matter to the State regulatory authorities should they request it.

11. As noted above under the discussion of 30 CFR 701.11(b) and (c) and in the preamble to Part 741, the applicability of the performance standards to existing operations on Federal lands is different from that under State or Federal programs. Performance standards apply six months after the effective date of the Federal lands program unless a mine plan revision is necessary for compliance. If a mine plan revision is necessary, an operator will have up to an additional six months to revise the mine plan and be in compliance, based upon a schedule approved by the regulatory authority.

OSM believes the mine plan revision process in 30 CFR 741.11 is adequate to handle exisiting nonconforming structures on Federal lands. Because of the earlier compliance dates on Federal lands, OSM believes imposition of the more formalized process in Sections 780.12, 784.12 and 786.21 is unreasonable. OSM anticipates, however, that the Regional Directors may well consider the same factors in determining whether a mine plan revision is necessary to achieve compliance for existing structures. 701.11(f) Coal Exploration Authority for this Section is found in Sections 102, 201, 501 and 512 of the Act.

This subsection provides that notice and approval requirements for coal exploration operations proposed under Part 776 of Subchapter G go into effect upon approval of a State program or implementation of a Federal program. Section 512 of the Act and its legislative history are silent on the effective date of its requirements. Because the notification and approval requirements in Part 776 are so much less burdensome than the permitting requirements for surface coal mining operations, OSM believes operators can reasonably be required to file notices or applications for approval immediately upon the effective date of a State or Federal program.

The Act provides no guidance concerning when applicable performance standards should begin to apply to coal exploration. Because most coal exploration operations are considerably smaller than a typical surface coal mining operation, the Office believes a reasonable approach is to apply the applicable performance standards to existing operations two months following approval of a State program or implementation of a Federal program. This approach is within the general rulemaking authority to carry out the purposes of the Act and consistent with these purposes as found in Section 102 of the Act.

Two months is considered an appropriate time for the regulatory authority to publicize the applicability of the performance standards, in a way likely to reach persons engaged in exploration activities in the State.

PART 707—EXEMPTION FOR COAL EXTRACTION INCIDENT TO GOVERNMENT-FINANCED HIGHWAY OR OTHER CONSTRUCTION

Authority for this Part is found in Section 201(c)(2), 501(b), and 528 of the Act.

This Part establishes the minimum criteria and procedures for those operations extracting coal as an incidental part of Federal, State or local government-financed highway or other construction which is exempt from the requirements of the Act. The regulations limit the scope of the exemption in a manner believed to be consistent with the congressional intent of Section 528 of the Act, and consistent with the overall philosophy of the Act to minimize the environmental impact and the risk to the public health and safety of surface coal mining operations. The regulations ensure that only those operations extracting coal incidental to government-financed construction are exempt from the requirements of the Act.

Section 528 (3) of the Act provides the authority for these regulations. That Section specifically requires that the exemption for coal extraction which is an incidental part of Federal, State or local government-financed highway or other construction be covered by regulations issued by the regulatory authority. The regulations in Part 707 establish the minimum criteria and procedures necessary to qualify for the exemption.

Relevant legislative history supporting these regulations includes—

(1) H.R. 5988, 93 Cong. Section 203.

(2) 119 Cong. Rec. 1368 (January 18, 1973, discussing Section 203 of H.R. 9568)
(3) S. Rep. No. 93-402, 93d Cong., 1st Sess. 50 (1973)
(4) S. Rep. No. 94-28, 94th Cong., 1st Sess. 223 (1975)
(5) S. 7, 95th Cong., 1st Sess., Section 428(3) (1977)
(6) S. Rep. No. 95-128, 95th Cong., 1st Sess. 98 (1977)
(7) H.R. Rep. No. 95-493, 95th Cong., 1st Sess. 112 (1977)
(8) S. Rep. No. 95-337, 95th Cong., 1st Sess. 112 (1977)

The legislative history is clear that Congress intended the Section 528(3) exemption to be a narrow one, as established by regulations. The third exemption was not added to Section 528 until the 95th Congress. Committee reports from earlier Congresses stated that exemptions in Section 528 (1) and (2) were provided because these classes of surface mining covered by the exemptions caused very little environmental damage and regulation of them would be burdensome for the regulatory authority and the industry (reference No. 3). When the third exemption was added in the Senate during the 95th Congress, the Committee continued to use the same language to describe all three exemptions (reference No. 4). However, the third exemption as added by the Senate was not limited to coal extraction incidental to government-financed construction (reference No. 4). The Conference modified the Senate language to "limit(s) the exemption to extraction of coal as an incidental part of government-funded construction only, rather than all construction as originally provided in the Senate language." (7)

1. Comments were made that the reference to "regulatory authority" in Section 528(3) of the Act meant that only the State regulatory authorities and not OSM could issue regulations dealing with Section 528(3) of the Act. OSM considers this comment legally invalid because general rulemaking authority is granted the Secretary of the Interior by Section 201 of the Act and the duty to promulgate regulations "governing a permanent regulatory procedure . . . based on and conforming to the provisions of Title V" is imposed by Section 501(b) of the Act. State regulatory authorities are free to promulgate regulations that are more stringent or more detailed than OSM's.

2. Comments were made that the phrase "government financed" in Section 528(3) modifies "highway construction" only and does not modify the phrase "other construction." Under such an interpretation, extraction of coal as an incidental part of private construction would be exempted by Section 528. OSM considers this comment legally invalid. In the House-Senate Conference Report (S. Rep. No. 95-337, 95th Cong., 1st Sess. 112 (1977)), the Conferees stated: "The Senate amendment also included an exemption for all construction. The conferees agreed to a modified version of the Senate amendment which limits the exemption to extraction of coal as an incidental part of government-funded construction only, rather than all construction as originally provided in the Senate language." From this OSM interprets the congressional intent of Section 528(3) to exempt only Federal, State, or local government-financed and not privately funded construction. (For more complete discussion of the legislative history see the Preamble to proposed Part 707 at 43 FR 41672 (September 18, 1978).)

3. Comments were made that the proposed regulations were too complex and therefore, too much paperwork for little environmental protection. OSM considered three alternatives in responding to this comment: (a) adopt very short regulations giving each State almost total discretion to interpret and implement the Act, (b) keep the same overall approach as proposed but reduce the paperwork by removing the requirement for the State financing agency to file a notice for each project with the State regulatory authority, and (c) make no change from the proposed regulations.

The first alternative would reduce OSM requirements to a minimum but was rejected because it would likely result in markedly different approaches in different States, some of which might be inconsistent with the Act or difficult to enforce. The second alternative would reduce paperwork but would still implement congressional intent and provide for relatively easy and efficient enforcement and acceptable citizen access to information. Because the benefits outweighed the minor decrease in accessibility of information as compared to the approach proposed, this alternative was adopted in response to the comment. The third alternative was rejected in order to achieve the reduction in paperwork of the alternative adopted.

4. Comments were made that proposed Section 707.5 should be changed to redefine the phrase "extraction of coal as an incidental part." Suggestions were made to allow for a value either lower or higher than the 50 percent of the cost of the project as proposed.

In light of these comments OSM considered possible changes to the definition. Alternatives based on the percentage approach were rejected because OSM believes the percentage of coal value to cost of the project is not sufficiently closely related to the congressional intent. The extraction would be incidental to the construction if the removal was necessary to the completion of the construction, even if the value of the coal was greater than 50 percent of the cost of the project. To retain the percentage approach, at the 50 percent level or at a higher or lower level, seems undesirable.

The approach adopted is that any extraction of coal which is necessary to enable the construction to be accomplished is an incidental part of the construction. The adopted approach may lead to some difficult engineering judgments for the State regulatory authorities. If a negative determination is made in a particular instance, some coal reserves might be left in place that could be removed under the percentage test. However, OSM believes that there will be few, if any, actual instances of this and that the engineering judgments can be made by the regulatory authority with the help of the public funding agency.

Coal mining may be incidental to the construction if its removal is necessary and if it is within the right-of-way, in the case of a road, railroad, utility line, or other such corridor or within the boundaries of the area directly affected by other government-financed construction. This limitation will prevent claims that what is essentially independent coal mining is somehow necessary to the actual construction.

5. Comments were received that the definition of "government-financed construction" should be changed to lower the requirement of 50 percent funding. In responding to these comments, OSM considered the alternatives of lowering or raising the percentage or leaving it at 50 percent. Little rationale was given for the suggestion to lower the percentage except that one commenter pointed out that by the proposed standard OSM might discourage donation of services by coal operations for a public benefit, such as the construction of a haul road that would be utilized by the public, and the resulting savings of taxes. OSM believes that the 50 percent level effectively divides those projects that are predominantly public from predominantly private and thus accurately implements congressional intent. OSM believes there will be few instances in which this standard will discourage construction that would otherwise comply with a lower percentage.

6. Comments were received that the government-financing agency should not be required to file nor the State regulatory authority keep publicly available the information required in the proposed regulations. Comments were also received that the exempted construction contractor should be re-

quired to keep nothing onsite. Both comments were attempts to reduce paperwork. OSM considered both alternatives and deleted the requirement for central filing with the State regulatory authority but retained a slightly reduced requirement for the construction contractor to maintain records on the site. Because relatively little was gained by filing with the regulatory authority except easy access to information, OSM adopted this approach to reduce paperwork.

Even without a filing requirement, OSM believes government funding agencies should and will usually consult with the State regulatory authority about environmental problems associated with the coal extraction during the construction project. On the other hand, the requirement to keep certain information at the site is relatively minor and will provide a basis for State and Federal inspectors independently or at the request of a citizen to determine quickly the exempt status of a given coal excavation site.

SUBCHAPTER B—INITIAL PROGRAM REGULATIONS (PARTS 710–725)

SUBCHAPTER C—PERMANENT REGULATORY PROGRAMS FOR NON-FEDERAL AND NON-INDIAN LANDS

PART 730—GENERAL REQUIREMENTS FOR REGULATORY PROGRAMS IN STATES

Authority: Sections 102, 201(c), 501(a), 503, 504, 505, and 521 of Pub. L. 95-87.

§ 730.1 Scope.

This Section gives an overview of the Subchapter, and is essentially unchanged from the proposed regulations.

§ 730.2 Objectives.

This Section lists the objectives for Subchapter C establishing the criteria and procedures for the Subchapter. Changes from the proposed regulations are editorial in nature.

§ 730.4 Responsibilities.

This Section delineates general responsibilities for the States, the Regional Director, the Director, and the Secretary for permanent regulatory programs as implemented by the States. The specific duties and responsibilities set out in this Section are based on the authority of Section 201 of the Act and on specific responsibilities delegated by the Secretary. Submission, review, and approval or disapproval responsibilities are discussed, as well as responsibility to maintain programs, to revise and amend programs and to invoke remedial actions should State programs not be administered effectively. Responsibility for administering funding assistance necessary to develop and enforce State programs is also established.

1. The comments addressing this Section raised several objections concerning the responsibilities assigned to the Director and the Secretary. Specifically, a commenter objected to the Director being responsible for approving and disapproving program amendments under Section 730.4(f). The final decision, it was felt, should lie with the Secretary. This proposal has not been accepted. Prior to issuance of the proposed regulations, the Secretary officially delegated certain responsibilities to the Director as allowed under Section 201(c) of the Act. This delegation included the authority to make the final decisions regarding program amendments. The Department has not changed this delegation. These decisions are not expected to be of a critical or controversial nature which would require Secretarial action. In those cases where Secretarial review is needed, it will be obtained under internal administrative procedures.

2. Other commenters raised similar objections to Section 730.4(g). These commenters objected to the Director's responsibility for both initiating Federal enforcement for a State program and withdrawing approval of a State program not being properly administered, maintained, or enforced. These commenters pointed out that the Act provides the Secretary with the authority to administer the program and that withdrawing a State program or initiating Federal enforcement should be considered as critical as the initial approval of a program. Commenters also recommended that, because the Secretary has the final responsibility for approving State programs, other equally critical decisions should be retained by the Secretary and not delegated to the Director.

After consideration of these comments, the Department has chosen to retain the Director's authority to initiate direct Federal enforcement. This authority has been duly delegated to the Director under the authority of Section 201(c) of the Act. However, as proposed in the comments, the more sensitive decision of withdrawing approval of a State program has been assigned in these regulations to the Secretary. Again, internal administrative procedures will permit delegation of this authority to the Director at a future date if such action is warranted.

§ 730.5 Definitions.

This Section contains definitions of two fundamental terms used throughout the Sections concerning State programs. The terms "in accordance with" and "consistent with" are used in many places in the Act to describe the degree of similarity required between the provisions of the Act and those to be established in a State program. The terms have been defined in these final regulations to provide a standard for uniformity between State provisions contained in a State program and provisions of the Act and the regulations. Authority for this Section is found in Sections 201(c) and 503(a) of the Act.

The Office received many comments commenting that the definitions for the terms "consistent with" and "in accordance with" be changed to allow greater variations between State programs and the Act and these regulations. Commenters interpreted the proposed definitions as requiring that the State law and regulations be virtually identical to the Federal law and regulations. The definitions for these terms have been revised and the new definitions, along with comments received, are discussed in the Preamble to Section 731.13, Standards and procedures for approval of alternatives to provisions of the regulations of this Chapter.

§ 730.11 Inconsistent and more stringent State laws and regulations.

This Section is based upon the provisions of Section 505(a) and (b) of the Act and reiterates the congressional directive that the Federal Act and regulations supercede any State law or regulation which is inconsistent with the provisions of the Act or its regulations. Section 730.11(b) specifies that any State law or regulation which provides for more stringent land use and environmental controls and regulation of surface coal mining and reclamation operations than do the provisions of this Act and this Chapter, or which provide for the control and regulation of coal exploration and surface coal mining and reclamation for which no provision is contained in the Act or this Chapter, will not be construed as inconsistent.

§ 730.12 Requirements for regulatory programs in States.

This Section requires that a State or Federal program be adopted no later than June 3, 1980, for each State in which coal exploration and surface coal mining and reclamation operations are or may be conducted on non-Federal and non-Indian land. Authority for this Section is contained in Section 503 of the Act. The Office is aware of several States with extractable coal reserves in which mining is not occurring now, but is likely to occur in the near future. The Office encourages these States to make a determination as to the potential for

future mining. If it is determined that mining is likely to occur in the near future, a State program should be submitted by the August 3, 1980 deadline. Section 731.12(b)(2) allows States to submit programs at a later date as they become aware of proposed mining operations.

Section 730.12 also has been revised to reiterate the requirements contained in Part 736 of this Chapter and to highlight specifically the provisions of Section 503(d) of the Act establishing exceptions to the June 3, 1980, deadline for implementation of a State or Federal program where a State has been enjoined from preparing, submitting, or enforcing a State program.

Specifically, coal surface mining and reclamation operations in a State where a State program is subject to an injunction will be regulated by the State pursuant to Section 502 of the Act until the injunction terminates, or for one year from the issuance of the injunction, whichever is shorter. At the end of this time period, the requirements of Sections 503 and 504 again will be fully applicable. Section 730.12(b) has been added to require the State to notify the Director of the issuance of any injunction which prevents or prohibits the State from preparing, submitting or enforcing a State program or any part thereof.

PART 731—SUBMISSION OF STATE PROGRAMS

Authority: Sections 102, 201(c), 501(b) and 503(a) of Pub. L. 95-87.

Part 731 establishes procedures and requirements for submission of State programs. Under Section 503(a) of the Act, any State in which coal exploration and surface coal mining and reclamation operations are being conducted or may be conducted is eligible to submit a State program for approval.

§ 731.12 Submission of State programs.

This Section contains the submission deadlines for State programs and authority for this Section is contained in Sections 201 and 503 of the Act. Under Section 731.12(a), a State has until August 3, 1979, to submit its proposed program to the Office. Under the proposed regulations this Section required submission of a State program by February 3, 1979. Under proposed Section 732.12(b), a State could petition the Office for an extension of time beyond February 3, 1979, if it was necessary for its State legislature to act before a complete State program could be submitted.

Numerous commenters objected to the deadlines for program submission in Section 731.12. Most commenters stated that it would not be possible to develop and submit a State program by February 3, 1979. Even with a six-month extension to August 3, 1979, most believed that the schedule was unreasonable and perhaps unattainable. Most proposals for additional time suggested that the date be extended by the same number of months that the Office was late in promulgating the regulations.

Although the Office is sympathetic to the commenters' concerns, the Act allows no discretion on the final program submission dates. The Act mandates a Federal program if States do not submit programs by February 3, 1979, or August 3, 1979, with a six-month extension, or if the State program is not approved by June 3, 1980. A Federal program must be established no later than June 3, 1980, if a State program has not been approved.

Section 731.12(a), however, has been revised to require submission on or before August 3, 1979. This change followed the Director's determination that legislative action was necessary in all States in order to prepare a State program in compliance with Section 503 of the Act. Another reason for this extension is that the effective date for these regulations establishing submission procedures falls beyond the proposed February 3, 1979, deadline.

Because of the modification in Section 731.12(a), Section 731.12(b) of the proposed regulations has been deleted. Sections 731.12(c) and 731.12(d) of the proposed regulations therefore have been lettered to Sections 731.12(b) and (c) respectively.

Two editorial changes have been made in Section 731.12(b). The term "under the Act" in the proposed rules has been defined in a more specific manner as "August 3, 1977," and the phrase "become aware of" has been made more definitive by using "anticipated." The Office believes that this latter change denotes more immediacy than was conveyed by the proposed language. Also, a new Section 731.12(b)(3) has been added, allowing submission after June 3, 1980, should the State program be enjoined as specified in Sections 730.12 and 503(d) of the Act. Section 731.12(c) is unchanged from the proposed regulations.

§ 731.13 Standards and procedures for approval of alternatives to provisions of the regulations of this Chapter.

This Section permits States to request variations from the regulations of this Chapter in order to develop regulatory programs to fit specific local requirements or local environmental or agricultural conditions of each State. This Section has been restructured and modified in response to many comments on the proposed regulations which pointed out inconsistencies between several Sections of the regulations and demanded greater clarity on the extent of variation to be allowed. Authority for this Section is contained in Sections 201(c), 503, 505, 518(f), and 521(d) of this Act.

1. Numerous commenters pointed out that while proposed Section 731.13 allowed alternative approaches, it was directly contradicted by the definitions of "consistent with" and "in accordance with" in Section 730.5. The definition of "consistent with" required that State regulations be "the same as or similar to" the regulations of this Chapter. The definition of "in accordance with" required that State laws "be in agreement with" the Act. Commenters stated that these definitions, especially the former, effectively limited the possibility of variation which Section 731.13 purported to allow. This inconsistency was compounded by a third standard for approval in Section 732.15(a)(2), "achieve the same or more stringent regulatory results." OSM agrees with these comments. All three Sections—730.5, 731.13, and 732.15(a)(2)—have been revised to include the same standard.

2. Commenters also addressed the question of how much variation should be allowed from the Federal Act and regulations. On this issue, commenters generally stated that Sections 101(f) and 201(c)(9) of the Act implicitly authorize a certain degree of flexibility for States in developing their programs and that this variation is explicitly authorized in Section 503 of the Act by the use of the words "in accordance with" and "consistent with." In interpreting these phrases, however, commenters differed on the degree of flexibility. Differences ranged from insistence that broad flexibility be established for State programs to recommendations that the amount of flexibility be reduced.

Section 503(a) of the Act requires the submission of a program which demonstrates that the State has the capability of carrying out the provisions of the Act and meeting its purpose in part through State laws and regulations which are "in accordance" and "consistent" with the requirements of the Act and the regulations of this Chapter. The underlying principle of the Act is to establish minimum national standards for surface coal mining and reclamation. It is the mandate of Section 503(a) of the Act that States achieve at least this minimum level of environmental control and regulation. This principle is reiterated throughout the Act. Sections 101(f) and 102(g) of the Act provide the specific mandate for a national program, and Sections 503(a), 518(f), and 521(d) of the Act establish the specific standard of compliance (i.e., must be in accordance with, no less stringent than). Most importantly, Section 505 of the Act provides that

the State laws and regulations which require more stringent land use and environmental control will not be considered inconsistent with the Act or the regulations.

OSM believes that these Sections clearly allow a degree of flexibility. The State provisions, however, cannot fall below the minimum standards established by the Act.

It is clear that Congress contemplated, through the use of the words "in accordance with" and "consistent with," some variation be allowed. This concern was expressed specifically in Section 201(c)(9) of the Act requiring the Secretary to assist the States in developing a program that meets the requirements of the Act and, at the same time, reflects local requirements and local environmental and agricultural conditions.

3. Generally, commenters expressed confusion over the meaning and relationship between such words as "in accordance with," "same or similar," "no less stringent," "reflects local conditions," and "meets the requirements of." Specific proposals by the commenters largely reiterated these terms, however. Suggested phrases were "no less stringent," "meets the minimum requirements," "is identical to," "achieves the same regulatory result," "no less stringent and meets the minimum requirements," and lastly, "achieves the same result."

(a) *"No less stringent"* on its own is not accepted because the Office believes that the Act establishes certain minimum requirements that alternative provisions must meet. These minimum requirements must be met regardless of the stringency of the alternatives. Section 503(a) of the Act specifically requires that a State submit a program which demonstrates that it has the capability of carrying out the provisions of the Act and meeting its purposes. "Stringency" by itself is only part of the standard required by the Act.

(b) *"Meets minimum requirements,"* alone is insufficient and therefore not accepted. Section 505(b) establishes that the Secretary shall set forth any State law or regulation which is construed to be inconsistent with the Act, adding that State laws and regulations shall not be construed as inconsistent should they provide for more stringent land use and environmental controls and regulations. Equally important, minimum requirements may not be explicit in all cases. Some other standard is needed to help ensure that the requirements of the Act and regulations are achieved.

(c) *"Is identical to"* is not accepted because Section 503(a) of the Act clearly requires that State laws and regulations only be "in accordance with" and "consistent with" the provisions of the Act and the Secretary's regulations. Section 201(c)(9) of the Act requires that State programs be granted some flexibility to strengthen the regulations of this Chapter to meet local requirements and environmental and agricultural concerns.

(d) *"Achieves the same regulatory result"* is not accepted because regulatory result is difficult to define. Also, there are many minimum requirements stated in the Act which must be met that are clearly not results.

(e) *"Capable of achieving same regulatory result"* is not acceptable for the same reasons as (d) above.

(f) *"Two distinct standards,"* for State regulations and State laws as outlined in the proposed regulations was proposed and not accepted. The use of the words "in accordance with" and "consistent with" in Section 503(a) of the Act do not explicitly require different standards to be set for judging the acceptability of State laws and State regulations. In fact, both the Act and the legislative history demonstrate that Congress used these terms interchangeably when referring to State laws or regulations.

(g) *"No standards."* The Office believes that there must be a standard degree of conformity between State statutes and regulations and applicable provisions of the Act and the regulations of this Chapter. This degree of uniformity is specifically required by Sections 101(f), 102(a), 201(c)(9), 503(a), 505, 518(i), and 521(d) of the Act. In addition Section 503(a) specifically requires the State to demonstrate that it is capable of meeting at least these minimum standards. This proposal is therefore not accepted.

(h) *"No less stringent and meets the minimum requirements."* This standard ensures that State programs will achieve a certain minimum level of environmental control and regulation as mandated by Sections 101(g), 503(a), and 505 of the Act and at the same time utilizes a test set out in Sections 503, 518(i), and 521(d) for judging alternative regulatory provisions proposed by the States. *Minimum requirements*, however, poses a substantial problem when applied to the regulations of this Chapter. *Minimum requirements* can readily be equaled to minimum design criteria, thus requiring a very high degree of conformity to the regulations and negating the flexibility intended. OSM's solution is to apply *no less stringent* to both the Act and regulations and *meets the minimum requirements* to the Act alone.

The *no less stringent* and *meets the minimum requirements* standard complies with the intent and requirements of the Act. *No less stringent* alone, applied to the regulations is consistent with the concept of allowing variation in State programs. Thus, a State program may vary from the regulations, but it may not be less stringent than either the Act or the regulations and it must meet the minimum requirements of the Act. Further, by applying this standard to both State laws and regulations, OSM recognizes that there is no clear dividing line between the two and therefore recognizes that there is no basis for applying different standards to them.

The Office also has included in the standard that State law and regulations include all applicable provisions of the Act and meet applicable provisions of the regulations of this Chapter. In evaluating alternative regulatory provisions the Office will require that all applicable Federal provisions be included, and that each applicable provision contained in the regulations must be met within a State's regulatory proposal. As discussed in Preamble to Section 732.15(b)(1) in regard to limiting required performance standards, "applicable" modifies the standard so as not to require States to include or meet Federal provisions where the State can demonstrate that there is an absence of conditions which would make the provision meaningful.

4. In addition to the comments regarding the general standards for State variations, the Office received comments proposing that States have the ability to approve alternatives to the Office's performance standards on a site-by-site, permit-by-permit basis. These comments maintained that, provided the alternative practices achieve the same regulatory result, there is no statutory prohibition against this flexibility.

This proposal has not been accepted. Establishment of a case by case variance capability commits the Secretary to pass judgement on program submissions which may be largely unspecified. The mandate of Section 503(a) of the Act is clear. The State must demonstrate its capability of carrying out the provisions of this Act. Adoption of the site-by-site alternative would allow for approval of State programs which could not demonstrate fully the capability to achieve the minimum standards mandated by Section 503(a) of the Act.

The final regulations specify that any variation to provisions of the Secretary's regulations must be approved pursuant to Section 731.13, and contained in the State program. Site-by-site variation, to the extent allowed, is already covered in Subchapter K.

5. In the proposed regulations, the degree of allowable variation for State programs was defined by the phrases *in accordance with* and *consistent with* in Section 730.5. Many commenters stated that the standard de-

fined in Section 730.5 was applied incorrectly to the submission procedures in Section 731.13 and was improperly stated in Section 732.15(a)(2) of the proposed regulations dealing with the criteria for approval. A number of comments were critical of the order and consistency throughout these three Sections. In an effort to meet these objections, the Office considered the following alternatives: (a) keep the standard in the definition and revise the other Sections to assure consistency, (b) delete the definition and place the standard in Section 732.15, and (c) place the standard in each specific regulatory provision.

The final regulations adopted alternative (a). Due to the interest generated by the definition Section, and the changes made, the Office believes that deleting the definitions would cause needless confusion. Comments sought consistent application of a given standard, not specific deletions. Similarly, the proposal to place the standard in specific regulations has not been accepted. The Office believes that paragraphs should remain the focal point for defining the relationship between Federal provisions and State provisions.

6. Several commenters proposed limiting variations to environmental performance standards. Others proposed restricting such a limitation to providing that any variation must be based only upon physical conditions.

These comments were not adopted. Section 201(c)(9) of the Act directs the Secretary to assist the States in the development of State programs which meet the requirements of the Act and at the same time reflect local requirements and local environmental and agricultural conditions. In this regard, the Office believes legislative intent is clear. Variation, in order to meet these minimum requirements, is allowed. In addition, Section 503 of the Act does not offer support for the limitations proposed by the commenters. Based on these Sections of the Act, Section 731.13 allows the State to propose alternative regulatory provisions as long as the State can demonstrate through documented evidence that the alternative will be no less stringest than provisions contained in the Act and the Secretary's regulations, and will meet the minimum requirements and include all applicable provisions of the Act. In addition, the State must demonstrate that proposed alternative are necessary because of local requirements or local environmental or agricultural conditions.

7. Some commenters stated that no variation should be allowed in the enforcement and penalty Sections. This comment has not been accepted. Sections 518(l) and 521(d) do not preclude alternative regulatory proposals. Both Sections require provisions which are "no less stringent than," and contain "the same or similar procedural requirements." The Office believes that these provisions allow the States a certain degree of flexibility in developing their total program as long as the provisions of the Act and the stringency standards are met.

8. A few commenters cited the provisions of Section 505 of the Act and 730.11 of the regulations as a means for providing variations. Such an interpretation suggests that States be allowed to employ alternative approaches, unless and until the Office could show them to be inconsistent with the Act or the Secretary's regulations. This proposal is not accepted because Section 503(a) of the Act requires the State first to demonstrate its ability to carry out the provisions of this Act and the regulations. This Section of the Act clearly places the burden upon the State to prove that any alternatives will meet the required standards. To facilitate this requirement Section 731.13 is necessary to provide procedures for the States in submitting alternative proposals.

In addition to changes brought about by development of the new standard, Section 731.13 has been revised to establish more clearly the State's responsibilities in proposing alternative regulatory provisions. Language has been added establishing the standard and procedure for use in proposing alternative provisions pursuant to amendments under Section 732.17. In many instances a State will not have sufficient data and analysis for an alternative at the time of program submission. Under Section 731.13, the State can propose alternatives at a later date as an amendment to its program when data and analysis become available. Any variation proposed by a State is subject to public review and hearings.

§ 731.14 Content requirements for program submissions.

This Section of the final regulations establishes the content requirements for a State program submission. A general requirement under Section 731.14 is that the submission demonstrate that the State is capable of carrying out the provisions of the Act and achieving its purposes. Final Section 731.14 (a) through (c) requires that the submission contain enacted or proposed laws and regulations, including existing or pending laws and regulations that directly affect the proposed program, and a legal comparison between the State laws and regulations and the Act and regulations of this Chapter. Final Section 731.14(d) requires designation of a State regulatory authority. Final Section 731.14 (e), (f), (i), (j), and (k) requires descriptions of the proposed organization, including personnel and staffing functions, and the relationship between the regulatory authority and other involved agencies. Final Section 731.14 (l) and (m) requires descriptions of budget projections and a description of physical resources, such as vehicles. Final Section 731.14(g) requires descriptions of the necessary systems and procedures that will make up the State program. Final Section 731.14(h) requires statistical information describing coal surface mining in the State which is adequate to demonstrate that the provisions of the State program and the resources available to it are sufficient when compared to the current and projected coal mining activities in the State. Final Section 731.14(n) requires a description of an anthracite program where applicable. Final Section 731.14(o) requires a description of other programs that the regulatory authority also may be required to administer. Final Section 731.14(p) provides that the Director may request other information that may be necessary to evaluate the proposed program submission.

The authority for establishing the content requirements for a program submission is contained in Section 503 (a) and (b) of the Act. Section 503(a) requires that a State program demonstrate that the State has the capability of carrying out the provisions of the Act and meeting its purposes. The seven provisions of Section 503(a) of the Act amplify this requirement, providing the basis for State program submission content requirements.

In keeping with the guidance furnished by the Act, the Office adopted three principal objectives governing what information should be included in a State program submission. First, the Office believes that basic data on the size and nature of the coal mining industry in a State is fundamental to the development of a State program as envisioned in the Act. Such information also enables the Office to properly assess the adequacy of the program. Second, and most importantly, the State must provide detail sufficient to demonstrate that the State program meets the requirements of the Act and regulations. Finally, the State should be required to submit only that information and detail clearly necessary to demonstrate capability as required in the Act. Consequently, several content requirements have been eliminated and others have been made more flexible allowing the State to submit information and to select appropriate methods for describing State capabilities.

Proposed Section 731.14 (a) and (b) required that program submissions include copies of effective or enacted State laws and regulations giving the

State full authority to implement the program. Some flexibility has been added in the final regulations, however. Final Section 731.14(a) combines proposed Section 731.14 (a) and (b), and now requires copies of enacted or *proposed* State laws and regulations. Comments proposing additional time to submit State programs are discussed in the Preamble to Section 731.12. Additional time to gain full authority through enacted laws and regulations is also discussed in the Preamble to Section 732.11.

In allowing submission of laws and regulations that have not been fully enacted, the Office has established two major criteria. First, the laws and regulations must be in the "process" of enactment. By this criterion, the Office means that the laws and regulations must not only be fully drafted but they also must have been introduced into the legislative or public review process and in a sufficiently timely manner to result in their enactment within the time frames established by these regulations. The Office may reject a State program submission as incomplete if laws and regulations have not been enacted and the State is clearly not making a good faith effort to enact the appropriate legislation. This, in turn, could lead directly to the development of a Federal program for the State.

The second criterion is that the State must have determined that the laws or regulations are "essential" to allow the approval. It is expected that the State program submission will clearly show this finding and the reasons that the laws or regulations proposed are essential. Finally, the Office notes that allowing submission of proposed laws and regulations is intended to facilitate State program development and should not be construed as allowing States to delay the necessary enactment or rulemaking process. If a State choses to submit a proposed program based substantially on laws or regulations not fully enacted, it faces an obvious risk of ultimate program disapproval because of the short periods available during the later portions of the schedule. It could not prove impracticable or impossible because of time for the State to correct deficiencies identified during the public review and hearings and final review by the Office.

1. Proposed Section 713.14(c) required submission of copies of other State laws directly affecting the regulation of coal surface mining and amendments to existing laws or regulations which are under consideration or pending. Commenters raised objections to both parts of the proposed Section. A commenter pointed out that numerous laws and amendments are proposed every year, while few are passed. The commenter continued, that proposed Section 732.17, requiring notification of the Regional Director when a significant event or proposed change in State law or regulations will affect the implementation, administration, or enforcement of the approved State program, is adequate protection against such potential conflicts. Another commenter noted that OSM is charged with enforcing Pub. L. 95-87 only and argued that proposed Section 731.14(c) exceeds the Office's statutory authority.

OSM has elected to retain the requirements of Section 731.14(c). Under the test of Section 503(a) of the Act, the Office considers this information essential to the State's presentation demonstrating that it can carry out effectively the provisions of the Act.

Section 731.14(b) of the final regulations requires States to submit copies of other laws and amendments to laws and regulations enacted or pending which directly affect the regulations of coal exploration and surface coal mining and reclamation. Inclusion of other laws and regulations should alert the Office and the State to potentially conflicting laws and regulations which may create problems during enforcement of a State program. The Office encountered several instances of this problem during the initial program, e.g., conflicting water quality requirements relating to coal mining.

Proposed Section 731.14(d) (relettered) required a legal opinion from the Attorney General of the State affirming legal authority to implement, administer and enforce the program in accordance with the Act and consistent with the Federal regulations. Proposed Section 731.14(d) also required a Section-by-Section comparison of the State's laws and regulations with the Act and Federal regulations, explaining any differences and their legal effect. This provision has undergone two changes. First, the required legal opinion may be prepared by either the Attorney General or the regulatory authority's chief legal officer. Several commenters indicated that the legal staff of the regulatory authority may be in a better position to determine the authority of its program when an Attorney General's office has not been involved previously with the regulatory authority. Second, final Section 731.14(c) allows both the opinion and the Section-by-Section comparison to address proposed laws and regulations, when the required authority has not been established by the date of program submission. A revised opinion and comparison will be required, if laws and regulations later enacted differ from those of the proposed program submission.

2. Several commenters recommended deleting the Section-by-Section comparison of State's laws and regulations with the Act and this Chapter. These commenters further recommended deleting the requirement for an explanation of any differences and their legal effects. One said that the State's Attorney General will formulate his opinion utilizing appropriate procedures of his office and will thus carry the same legal effect, irrespective of his method of analysis. Other commenters said that any written Section-by-Section analysis should be prepared by OSM. Another comment asserted the Section-by-Section analysis was unfair and burdensome. Contrary to these comments, the Office believes a side-by-side comparison is necessary. Section 503(a) of the Act specifically requires the State to demonstrate its capability to carry out the provisions of the program. The Section-by-Section comparison is an essential ingredient of the State's demonstration of ability and program adequacy under this Section of the Act. With regard to the comment proposing that OSM prepare the side-by-side comparison, the Office believes that this is best performed by State officials most familiar with their own laws and requirements. Finally, this analysis will also assist the Office in evaluating proposals for alternative provisions pursuant to Section 731.13.

Proposed Section 731.14(d) has not been changed. It requires submission of the order or statute authorizing the State to carry out a State program and administer program grants.

Final Section 731.14(e) has not been changed from proposed Section 731.14(f), requiring a chart or table of organization for the regulatory agency and other agencies involved in the State program. The chart primarily will allow the Office to assess the adequacy of the program in terms of projected workload and time constraints imposed by the Act.

Final Section 731.14(f) (formerly Section 731.14(g)) is unchanged. This requires a copy of supporting agreements between agencies which will have duties in the program. These agreements are necessary to ensure program support within the proposed State program.

Section 731.14(g) (previously Section 731.14(h)) has been revised to allow a degree of State discretion in detailing proposed systems and processes. The revised language allows the use of "other appropriate means" to describe proposed systems and processes. In short, whatever device the State determines to be most suitable may be used.

3. Several commenters called proposed Section 731.14(h), now Section 731.14(g), irrelevant and burdensome. A commenter stated that copies of the

State's coal related laws and organizational charts should suffice. Another wrote that this Section requires States to develop systems and processes for over 16 specific categories and illustrate these by flowchart. Continuing, this commenter stated that Section 503 of the Act only requires a process for the review and issuance of permits, and argued that we should not strangle ourselves with flowcharts and paperwork. Another commenter suggested that a statement to the effect that these functions will be carried out in accordance with applicable regulations would be sufficient. The revision to final Section 731.14(g) allowing other appropriate means to describe proposed systems and procedures should reduce the burden to the States in preparing information required under this Section. Suggestions to reduce the coverage of this Section have not been accepted, however. Section 503 of the Act requires that the State demonstrate its capability to carry out the provisions of the Act. In addition to permitting, these provisions cover bonding, inspection, enforcement, public participation, etc. All are part of the total State program which the Secretary must approve. The information requested is essential for that purpose. Proposed Section 731.14(h)(1) required description of the State's proposed permitting system and also required the States to use a uniform numbering permit system adopted by the Office. A few commenters stated that each State regulatory authority should be allowed to establish a permit numbering system of its own or institute a system already in existence. They proposed that the Office develop a suggested permit numbering system for the States to adopt at their discretion. Another commenter asked why the Federal Government should dictate a uniform numbering system for permits. These comments were accepted and the numbering system has been deleted from the final regulations.

Final Section 731.14(g)(1) also has been revised to expand the required description to include receiving applications for new or revised approvals for coal exploration. This revision is basically editorial and combines proposed Section 731.14 (h)(1) and (h)(14).

4. Several commenters argued that proposed Section 731.14(h)(2) (i) and (ii) was in contradiction to Section 507(a) of the Act which states that permit fees "may be less than, but shall not exceed the actual or anticipated cost of reviewing, administering and enforcing the permit issued pursuant to a State or Federal Program." Proposed Section 731.14(h)(2) eliminated the Act's language ". . . may be less than . . .," and added, in Section 731.14(h)(2)(ii) the concept of *"average* estimated costs . . ." While these two departures from Section 507 of the Act were believed to have no substantive effect, numerous commenters misinterpreted the proposed Sections to have removed the discretionary minimum fee level provided for in the Act. Other comments suggested that permit fee requirements be relocated to Part 771, General requirements for permits and applications.

The Office has accepted these comments. Fee requirements for a State program have been clarified to reflect the intent of Section 507(a) of the Act. Final Section 731.14(g)(2) now is written to conform to Section 771.25.

Proposed Section 731.14(h)(3) has not been changed and appears in these final regulations as Section 731.14(g)(3). This requires description of the system for posting, releasing, and forfeiting performance bonds or other equivalent sureties.

Proposed Section 731.14(h)(4) has been revised and appears in these final regulations as Section 731.14(g)(4). This Section requires description of the procedure and system for inspecting and monitoring coal exploration and surface coal mining operations.

5. Several commenters challenged the authority of the Office to require citizen participation in State inspections. These commenters believe that other opportunities for public participation are adequate. They also fear that citizens may disrupt the inspection process or the mining operation. Another commenter expressed uncertainty as to what public participation can be included in an inspection. Another commenter noted that Section 731.14(h)(15) requires the State to describe all public participation and stated that it was therefore unnecessary in proposed Section 731.14(h)(4). The Office has not accepted these comments to eliminate the phrase requiring provisions for public participation in the inspection process. As required in Section 732.15(b)(5), States must have an inspection system consistent with the requirements of Section 517 of the Act and Subchapter L of the regulations. This requires that the State include provisions for public participation in inspections.

Proposed Section 731.14(h) (5), (6), (7), and (8) has not been changed. This appears in the final regulations as Section 731.14(g) (5), (6), (7), and (8). This Section requires the States to describe systems and procedures for enforcement, assessment of civil penalties, and holding of public hearings.

Proposed Section 731.14(h)(9) has not been revised and appears in the final regulations as Section 731.14(g)(9). This requires the State to describe the procedure for coordinating issuance of permits required under the Act and the regulations with other State, Federal, and local agencies.

6. In reference to proposed Section 731.14(h)(9), a commenter pointed out that some State laws provide only one agency statutory authority to issue permits and proposed that Section 731.14(h)(9) require consulting, not coordinating. This commenter interpreted coordinating to be a shared responsibility for issuing permits. In many States, however, surface mining and water quality control permits are issued by different agencies, necessitating a coordinating function. In addition, Section 503 (a) and (b) of the Act requires a process for "coordinating" the review and issuance of permits. Thus, this alternative is not accepted.

7. A few commenters stated that involvement of Federal agencies, as proposed in Section 731.14(h) (9) and (10) should not be required. They argue that these requirements will be administratively and financially burdensome and will duplicate or replace involvement already in place between the responsible State and local agencies and their overseeing Federal agencies. This recommendation has not been accepted. Proposed Section 731.14(h)(9) is required pursuant to Section 503(a)(6) of the Act. Proposed Section 731.14(h)(10) (now (g)(10)) is required pursuant to other Federal laws, which must be implemented pursuant to the Act.

Some States have designated a State agency to administer Federal environmental, historical, and cultural laws and Federal permits associated with coal mining. The Historic Preservation Act is administered by the Heritage Conservation and Recreation Service through various State agencies. However, there are cases where a program affected by surface mining under the Act is directly administered by a Federal agency. Attempting to make allowances for the variety of administrative arrangements between Federal and State agencies would needlessly complicate the regulation.

8. A few commenters asked that the Office specifically incorporate into proposed Section 731.14(h)(10), consultation with the State Historic Preservation Officer concerning archaeological, historical, and cultural resources. The commenters stated that because of the importance of the cultural resources such required consultation should be clearly defined. One commenter suggested that consultation with other agencies be carried out on a regular basis, particularly prior to or during the permitting process. A few commenters asked that OSM incorporate consultation with the Historic and Cultural Preservation Laws. A commenter also recommended that the regulations include specific penal-

ties and other sanctions sufficient to render willful destruction of cultural resources more expensive than avoidance of criminal behavior.

These suggestions have not been accepted. The Office believes the requirement that the State identify a proposed system or process for consulting with State and Federal agencies having responsibility for these matters is sufficient to assure compliance with other Acts and requirements with regard to other environmental values, particularly when viewed in light of the specific requirements of Subchapter F.

Proposed Section 731.14 (h)(10), however, has been revised to specifically include consultation with regard to archaeological values. Archaeological resources have been included as a specific value based on Section 507(b)(13) of the Act which requires consideration of such features in permit application reviews and Section 522 of the Act, with respect to the designation of lands as unsuitable for coal mining.

Proposed Section 731.14 (h)(11) and (12) has not been revised and appears as Section 731.14 (g)(11) and (12) in these final regulations. Final Section 731.14 (g)(11) requires the State to describe its program to designate lands unsuitable for surface coal mining operations. Final Section 731.14 (g)(12) requires a description of the procedure for monitoring, reviewing and enforcing the conflict of interest requirements with regard to State employees.

Proposed Section 731.14 (h)(13) has been revised and appears in the final regulations as Section 731.14 (g)(13). The proposed regulation required that a program submission include the description of the procedure for training, examining and certifying blasters consistent with Subchapter M. Because Subchapter M is being reproposed and will not be effective until sometime after promulgation of these regulations, final Section 731.14 (g)(13) requires that the State describe the procedure for training, examining, and certifying blasters no later than six months following promulgation of final Subchapter M. The initial program submission should describe procedures for developing the system to train, examine, and certify blasters once Subchapter M is effective.

Proposed Section 731.14 (h)(14) has been combined with Section 731.14 (g)(1). Proposed Section 731.14 (h)(15) and (16) has not been substantially revised and appears in the final regulations as Section 731.14 (g)(14) and (15). Final Section 731.14 (g)(14) requires a description of the procedure for providing public participation in the development, revision, and enforcement of State regulations, the State program and permits under the State program. Final Section 731.14 (g)(15) requires a description of the procedure for administrative and judicial review of the State program, including inspection and enforcement actions.

A new Section 731.14 (g)(16) has been added, requiring a description of the State program to provide assistance to small operators. This is in response to several commenters who pointed out that Section 507(c) of the Act requires that the determination of probable hydrologic consequences and the statement of the result of test borings be funded by the regulatory authority for small operators. Although final regulations issued December 13, 1977, established this requirement, the proposed regulations did not. The Office, therefore, has included the Small Operator's Assistance Program as a submission requirement in Section 731.14.

Proposed Sections 731.14 (i)(1) through (8) required that a program submission include eight specific items of statistical information, describing coal exploration and surface coal mining and reclamation operations in the state. Numerous comments were received addressing this requirement. Most questioned the need for the information in a program submission.

9. A commenter stated that the informational requirements of proposed Section 731.14 (h) are excessive and that it should be remembered that "a State regulatory authority has as its purpose for being, the assurance of reclamation, not the reassurance of OSM." This commenter further stated that while the Act requires the State to demonstrate its ability to carry out the provisions and purposes of the Act, it is also very specific about the mechanisms deemed necessary for this demonstration. According to the commenter, the proposed program content requirements go well beyond the intent of the Act. Another commenter stated that proposed Section 731.14 contained 45 specific mandates for data submission and that much of this detail is unnecessary and of little value in reviewing a State's application. Another commenter recommended that all required information should be based on "existing data." Another commenter stated that the information required on permits in effect, when considered with existing personnel and other resources of the regulatory authority, will provide a much more meaningful index of the State's ability to implement the permanent program. This commenter added that much of the information requested is neither available nor relevant and will be time consuming to prepare.

10. One commenter suggested deleting proposed items (1) through (8) and revising Section 731.14 (i) to read: "Statistical information describing coal exploration and surface coal mining and reclamation operations in the State, including, the number, size, and geographical distribution of surface and underground mines at the time of submission of the program."

In response to these many comments, the Office has revised Section 731.14 (i) to provide the States with a degree of flexibility in the submission of data and statistics. Items (1) through (8) have been restated in final Section 731.14 (h) as "suggested," not mandatory requirements. However, program submissions must include information adequate to demonstrate that the provisions of the State program and the resources available to it are sufficient to meet current and projected coal mining activities in the State. Items (1) through (8) would, the Office believes, provide the type of information necessary to make such an evaluation. However, the State may elect to provide other similar information which will show the current and projected workload of its program.

11. There were several comments recommending expansion of proposed Section 731.14(i)(6) (now (h)(6)) to include the number of violations cited and their disposition during the interim program. Two commenters said that the frequency of inspection, taken alone, is no index to the effectiveness of a State's enforcement efforts. They continued that one must know the number of violations cited and their disposition before any reliable evaluation of State enforcement can be made. Another commenter suggested that citizen complaints regarding operations be included along with their disposition within the program submission. Another commenter asked for specific enforcement data for at least a three-year period prior to program submission. Another suggested inclusion of prosecution statistics.

This Section allows the Office to judge the State's capability to meet minimum Federal inspection frequency requirements in the permanent regulations. Proposed requirements for the history and progress of regulation in the State have been deleted because of a State's past history of administration is not a fair indicator of its future abilities under the Federal legislation. There was a wide diversity of State legislation prior to enactment of Pub. L. 95-87 and simple statistics will not give a reliable guide to the State's enforcement practices. For these reasons, the proposals to expand the language of Section 731.14(i)(6) have not been accepted.

12. Proposed Section 731.14(l) required the program submission to include a map showing office locations of the regulatory authority and other

agencies involved in the State program, including the number of employees and job functions at each location. The Office received many comments protesting this requirement. Most commenters said that the requirement was burdensome and irrelevant. One commenter said the aim of the requirement was to ensure accessibility; however, a map is not a good indicator due to numerous other factors. This commenter continued that the distance and proximity of the Office to operations and the public would require some indication as to the location of either group. Another commenter stated that given the wide dispersal, particularly of the public affected by mining, such a relationship would be impossible to estimate, let alone illustrate. Another commenter called the map requirement: "a striking example of overly detailed requirements." In response to these comments, the map requirement has been deleted. Office locations however must be included in the program submission in response to final Section 731.14(m).

Proposed Section 731.14(n) has not been changed except for editorial clarifications. It appears as Section 731.14(l) in these final regulations. This Section requires the State to describe its existing and proposed budget for administration of the State program.

13. Proposed Section 731.14(p) required a narrative description of the State's history and progress of regulation. A large number of commenters felt this requirement was unnecessary and burdensome. A commenter stated that the capability to administer a permanent program at any given point in time is based more on the integrity and strength of the regulatory agency's director and staff than on the "progress of regulation in the State." Another commenter stated that this requirement is not authorized by the Act nor justified by any legitimate OSM need for purposes of program approval or disapproval. Another commenter stated that OSM would have already monitored the States' performance in microscopic detail and will have kept voluminous records and suggests deletion of the requirement.

14. Related to the same issue, two commenters asked that proposed Section 731.14(p) be revised to eliminate the first proposed clause and leave the second proposed clause requiring other information as appropriate to demonstrate the State's capability to administer a permanent regulatory program. Other commenters suggest the narrative history requirement be expanded. One commenter recommended requiring a record of past public participation.

The request to expand required documentation of past performance has not been accepted while the numerous comments recommending that the proposed history narrative be deleted in its entirety have been accepted. The intent of the Act is to bring about major changes in regulation of surface coal mining operations. The use of past history to determine whether a State program should be approved is inconsistent with that intent.

Proposed Section 731.14(r) required a description of other programs administered by the regulatory authority. This Section has not been revised and appears in the final regulations as Section 731.14(o). The Office believes this requirement is necessary to determine whether other obligations may interfere with new responsibilities under the State program.

Proposed Section 731.14(s) (now Section 731.14(p)) established that a State may be required to submit other information as the Director may require. This requirement is essential to enable the Director to request information addressing the unique characteristics of each State making a submission.

15. There were a large number of comments objecting to proposed Section 731.14(s). Many of these comments charged that the explicit content requirements, in Sections 731.14 (a) through (r) are in themselves excessive, and the inclusion of other information "as the Director may require," raises the possibility of extended disputes and negotiations with respect to the completeness of a State's program submission. A commenter proposed expanding this requirement by adding: "Such other information as the Director may, after reasonable notice, require to ensure the State sufficient time to respond to such requests and prevent unnecessary delay . . ." in taking over a program. The Office has not accepted these suggestions, but has revised this Section to make it clear that the Director may require only such additional information requirements of Sections 731.13 and 731.14. Deleting Section 731.14(p) would deprive the Director of authority to obtain information needed for evaluation of State programs. Lacking such information, the Director could find it necessary to recommend program disapproval because some element had not been demonstrated as fully adequate by the material submitted. The Office believes it more appropriate to provide for a request for additional data than to leave only the more serious action of disapproval available when such a deficiency is found.

16. The proposed regulations contained no requirements that a State submit resource maps describing specific resources in relation to potential coal mining. One commenter suggested that Section 731.14, content requirements be expanded to include three maps as follows:

a. A State map or maps showing streams contaminated with acid mine drainage with a description of the problem by watershed.

b. A State map or maps showing location, type and size of abandoned mines.

c. Maps indicating the relationship of present and potential mine areas to prime farmland and unique historical and archaeological features.

This suggestion for additional maps has not been accepted. The pictorial information provided by these maps would be useful in generally understanding surface mining within the State. However, the information gained pertinent to evaluating a State's capability to properly administer the Act would not outweigh the cost of preparing such maps statewide and the time consumed in performing the job. In addition, much of this information will be generated on a site-by-site basis as a requirement for permit applications or included in the State's abandoned mine reclamation plan under Subchapter R of this Chapter.

17. A number of commenters suggested that OSM have an evaluation team visit each State before program submission to gather the statistical and technical information required by Section 731.14. In this proposal, OSM would evaluate their findings and submit a written report which would be incorporated into the State program. In support of this alternative, a commenter wrote that OSM should send a State program review team to each State to interview staff and administrators and send a written finding that details program deficiencies to the regulatory authority. Another commenter suggested an on-site evaluation after program submission. Another commenter stated that the burden for proof of an acceptable program should be on OSM and not on the States.

With regard to recommendations to require OSM to visit States and evaluate proposed programs, OSM believes that such visits and evaluations are not an effective way of gathering the required data and would frustrate the Act's emphasis on State development of a program. This approach would be time consuming in that most of the data requested would still have to be prepared for presentation to the evaluaters. Public participation and hearing requirements would make it difficult to accept less than complete responses to the requirements of Section 731.14, thus using most of the preparation time required under the proposed guidelines. In addition, because of scheduling difficulties, the evaluation team process may actually further

delay the timetable for program submission and approval. This alternative is therefore rejected. This does not mean that OSM staff will not aid and meet with States in order to review and discuss their submittals.

The proposed regulations did not include a Section establishing requirements dealing with meetings between the Office and a State regarding program submissions. These final regulations make no change in this area and there is no Section establishing requirements for program development meetings between the Office and a State.

18. The Preamble to the proposed regulations stated that there would be no ex parte contact following submission of a State program. Instead, according to that Preamble, following program submission, the Office would afford interested citizens and groups an opportunity to attend any meeting between OSM and the State. The Preamble also stated that OSM intended to meet often with the State prior to program submission to assist in the development of the program. Several commenters contended that it is certain that key program decisions will be made during these presubmission meetings. These commenters proposed that these discussions also be open to the public. The same commenters offered an alternative to open meetings by suggesting that the Office hold public briefings from time to time in an effort to obtain public input and to keep the public involved. In contrast, one State agency proposed that the following be inserted in the regulations: "The regional director will at the request of the State regulatory authority assist the States in an advisory capacity in the preparation and development of a State program. In this capacity he may conduct preliminary reviews of the State program or any part thereof without being required to initiate public notices and/or participation."

The Office has not accepted these comments to establish requirements within the regulations for presubmission and postsubmission meetings between the Office and a State to discuss program development. These final regulations therefore do not specifically prohibit ex parte contact prior to or following program submission. It should be noted that this explanation represents a change in intended policy from that contained in the Preamble to the proposed regulations. The recommendation to change the regulation to provide for open meetings between the States and OSM has not been accepted since it is not required by the Act. The presubmission meetings will be crucial to program development and the Office intends to meet often with States during this time to provide assistance. Many of these meetings are likely to be working sessions which extend over days or weeks. With regard to meetings following program submission. The Office intends to issue procedural guidelines prior to submission of State programs. These guidelines will address the format for postsubmission exchanges that will occur between OSM and the State. It must be noted that the final regulations provide for an additional period of time following program submission in which States will be permitted to make modifications, changes and additions to programs. Certainly there must be free exchange between OSM and the State during this additional period for program modification. The provisions for public participation in the development and approval process are discussed further in Part 732.

PART 732—PROCEDURES AND CRITERIA FOR APPROVAL OR DISAPPROVAL OF STATE PROGRAM SUBMISSIONS

Authority: Sections 102, 201(c), 501(b), 503, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 521 and 522 of Pub. L. 95-87.

Part 732 of the regulations provides criteria and procedures for review and approval or disapproval of State program submissions. Authority for these provisions is contained in Sections 503(b) and (c) of the Act. This Part also establishes the procedures and criteria for amending approved State programs.

Commenters have raised three major issues in this Part. First, there was a great deal of concern and interest in the review procedures of the State program submissions. Interest in this area dealt with questions of submission and approval deadlines as well as with the type of involvement the public will have in the review process. The second major issue concerned criteria for approval. Commenters in this area again were chiefly concerned with internal procedures of review and approval. Third, commenters showed great interest in the amendment section. Comments in this area addressed the inconsistencies contained in the proposed regulations and also suggested changes to the amendment procedures.

One important change in Parts 731 and 732 is the establishment of a new timetable for program submission and review. In Part 731 the program submission date has been extended six months to August 3, 1979. This extension, however, requires a revision of the program review procedures. Set forth below is the new timetable for program review and an explanation of how this timetable will be implemented. A more detailed discussion of the comments and specific Sections in Part 732 will follow.

As now set forth in Part 732 for programs submitted on or just prior to August 3, 1979, the Regional Director will hold a public review of the initial program submission on or about September 15, 1979, to discuss the program and its completeness. States will have until November 15, 1979, to make additions and modifications and to submit evidence of full legal authority with copies of enacted laws and regulations. States that do not submit full legal authority at this time will have their program disapproved by initial decision of the Secretary no later than February 3, 1980. However, pursuant to Section 503(c) of the Act, these States will have an opportunity to resubmit programs with enacted laws and regulations for review and approval or disapproval.

All program submissions, whether they contain enacted or proposed laws and regulations, will be subject to a public hearing scheduled during late December 1979 or early January 1980. This hearing will be held for all submissions even though those without enacted laws and regulations will be subject to a second public hearing following enactment of necessary authority. The arrangement acknowledges the short time available for the public to review revised program submissions before the second public hearing. The requirement for two review periods and two public hearings for submissions that do not include enacted authority prior to the first hearing should provide citizens adequate opportunity for input. Following the initial public hearing, the Secretary must issue a decision approving or initially disapproving the program. This decision must be issued within six months of the receipt of a program submission by the Regional Director but no later than February 3, 1980. States whose programs do not include full legal authority in the form of fully enacted laws and regulations prior to the public hearing will be disapproved under the initial decision. These States and States with disapprovals for other reasons may resubmit a revised program on or before April 3, 1980. All program resubmissions must include full authority through enacted laws and regulations. Another hearing will be held on or about May 3, 1980. The final decision of the Secretary approving or disapproving the program will be issued by June 3, 1980.

With the new timetable contained in the final regulations States are allowed until November 15, 1979 to make modifications to the submission including the addition of full legal authority. If a program is initially disap-

proved, States are allowed to make further modifications and add full legal authority through enacted laws and regulations until April 3, 1980.

Following is a timetable listing the key dates for submissions, review, approval or disapproval and resubmission of State programs. The regulations, however, are drafted so as not to limit earlier submission, and earlier submission will result in an earlier review and decision by the Office and the Secretary.

SUBMISSION, REVIEW, APPROVAL OR DISAPPROVAL TIMETABLE

Latest Submission—August 3, 1979.

Public review sessions—written public comments due—September 15, 1979.

Public hearings—from December 15, 1979 through January 10, 1980.

Written public comments due—On date of public hearing.

Secretary's decision—February 3, 1980.

Latest resubmission for disapproved programs—must include full legal authority—April 3, 1980.

Public hearing for program resubmissions—on or about May 3, 1980. Written public comments due—on or about May 3, 1980.

Final Secretary's Decision—June 3, 1980.

The new timetable is consistent with the key dates established in Sections 503 and 504 of the Act. This revision eases the time constraint imposed by the requirement of full authority at date of submission that appeared in the proposed regulations. It gives States more flexibility by allowing them to modify programs following an informal public review and comment period.

There is sufficient flexibility within Section 503(a) of the Act to allow States additional time to acquire full legal authority after submission of their State programs. The public will be entitled to review proposed laws and regulations for the period of the public review and still will have at least 30 days to review enacted laws and regulations before the public hearing. For those States that resubmit corrected programs there still will be at least a 15-day period for the public to review enacted authority before the second public hearing is held. The Office believes that States whose legislatures meet in 1979 should be able to enact laws and regulations before November 15, 1979, and submit them to the Regional Director so they may be made available for public review. For these States the formal public hearings to be held in late December 1979 or early January 1980 will provide the public at least 30 days for review and analysis of enacted laws and regulations. This alternative is preferable to others suggested by commenters because it requires no tampering with the June 3, 1980, deadline for permanent programs, contained in Section 504(a) of the Act.

Discussed below are the specific comments received on Part 732 and all changes that have been made by the Office. Because of the large volume of comments and the detail needed to respond to them, the Office has outlined its discussion by Section.

§ 732.1 Scope.

This Section remains essentially the same as in the proposed regulations except for a few minor editorial changes.

§ 732.4 Responsibility.

This Section establishes the responsibilities for the Regional Director, the Director and the Secretary and is restructured into three Sections. The changes that have been made are editorial.

§ 732.11 Review by the Regional Director.

1. Section 732.11(a), concerning initial program review by the Regional Director, has been substantially revised due to the new timetable discussed previously. This Section requires the Regional Director to publish in the FEDERAL REGISTER and in a newspaper of general circulation in a State a notice meeting certain specified requirements. This Section now requires that the notice provide the location of each Office within the State where copies of the program submission are available for review and also allows the public 30 days within which to submit comments. Lastly, Section 732.11(a)(4) now makes a public review meeting mandatory.

2. In Section 732.11(b) the revisions have been less extensive. Due to the new review timetable discussed previously, the Regional Director now has 60 days to publish his determination of completeness.

3. Sections 732.11 (c) and (d) also have been amended due to the new review schedule. Under this new schedule, modified program submissions must be returned to the Regional Director no later than November 15, 1979. If required modifications have not been made, the program submission will be disapproved under the Secretary's initial decision (Section 732.11(d)). The provision requiring the initiation of procedures to implement a Federal program has been deleted. This provision was criticized by many commenters as too drastic. The Office agrees. The new submission and review timetable should give the State greater flexibility and time to submit an acceptable program.

Submissions that do not include full authority through enacted laws and regulations by November 15, 1979, will be disapproved under the Secretary's initial decision. Enacted laws and regulations may still be added to the program and resubmitted under Section 732.13(f) for review and final decision by the Secretary.

§ 732.12 Notice and Public Hearing Requirements.

1. Section 732.12 establishes procedures for public hearings to review the initial State program submissions. At least one public hearing is specifically required by Section 503(b)(3) of the Act. As discussed previously, the new review timetable requires hearings to be held in late December 1979 or early January 1980 for States that submit programs just prior to August 3, 1979 or that wait until or just prior to November 15, 1979 to make additions or modifications to program submissions. Paragraph (a) sets forth the notice requirements for the public hearings. Such notices will include information on how and where the public can review the State program submissions as well as specifying the comment period and date of the public hearing.

2. Section 732.12(b) sets out the date of the public hearing as well as the type of procedures that will be followed in the hearing. Because of the new timetable for review, the public hearing will now be held no sooner than 30 days after publication of the notice required in Section 732.12(a). Given the new provision in Section 732.11 which allows for additions and modifications to the initial program submission, there is not sufficient time for a 60-day notice. However, this is offset by more extensive early public review. This Section also requires a public hearing for all program submissions—although the submission does not include enacted laws and regulations by November 15, 1979. If a State program submission includes proposed laws and regulations which the State believes will eventually be enacted, the public hearing under Section 732.12(b)(2) will be used to review the proposed program and proposed authority. When a State's laws and regulations are fully enacted, another public hearing will be held to review them. This arrangement allows public involvement throughout the review process without curtailing the flexibility needed by the States to develop an acceptable program.

3. The provision in Section 732.12(b) relating to additional hearings has been deleted. The Office anticipates holding only one public hearing for most State submissions (in addition to the public review meeting). However, if a program is disapproved and a revised program is resubmitted, another public hearing will be held to review the final submissions.

4. Section 732.12(b) also provides that the public hearings will be informal and follow legislative procedures. Several commenters suggested quasi-adjudicatory procedures including the right to cross-examination or to question witnesses. OSM has not adopted this alternative. Neither the Constitution nor the Administrative Procedures Act requires more than legislative type procedures. See *Vermont Yankee Nuclear Power Commission v. NRDC*, 435 U.S. 519 (1978); *South Terminal Corporation v. EPA*, 504 F. 2d 646 (1st Cir. 1974).

§ 732.13 Decision by the Secretary.

1. Section 732.13 establishes the procedures for Secretarial approval or disapproval of a State program submission. Authority for this Section is contained in Section 503 (b) and (c) of the Act. The changes that have been made in these five Sections are nonsubstantive and editorial in nature. In Section 732.13(d) the "180-day" time limit has been changed to "six months" to be consistent with the language in Section 503(b) of the Act.

2. A commenter on these Sections objected to the requirement in Section 732.13(b)(2) concerning concurrence by EPA. The comment stated that this exceeds the authority of the Act. This requirement, however, has been left in regulations. Under Section 503(b) of the Act, the Secretary must obtain the written concurrence of the Administrator of the Environmental Protection Agency before a State program is approved.

3. A few commenters suggested that Section 732.13 of the regulations provide a preliminary disapproval decision in less than 180 days for those States where disapproval of the program would necessitate legislative action prior to resubmission. This suggestion has not been accepted by the Office since such procedures would be cumbersome and are not specifically required by the Act. Moreover, the Office has already addressed this problem during the initial review by the Regional Director under Section 732.11. During this time the Office will make every effort to work with the States to resolve program deficiencies.

4. Section 732.13(f) provides the procedures to be followed by a State if the Secretary disapproves the initial program submission. Section (f) states that resubmitted programs will be reviewed under the procedures of Section 732.12. In all cases, this hearing will be the second public hearing for the proposed program. Emphasis by the Office during this second public hearing will be on the portions of the proposed programs that have been revised since the first hearing. Under the revised time schedule for review, this Section provides that the public review and comment period may be shortened to not less than 15 days. The public hearing also may follow public notice by not less than 15 days. Because this will be a second hearing and a second opportunity to comment, the Office believes that this shorter comment period will not hinder public review.

5. The Office also has made one editorial change. Resubmission of a revised program should be made to the Regional Director and not the Director as required in the proposed regulations.

6. Section 732.13(g) has been added to this Section in order to clarify the effect of not resubmitting a program within the 60 day period provided in Section 732.13(f). If a State fails to meet this deadline, which may be as late as April 3, 1980, the Secretary will issue a final disapproval and publish his decision and the basis for it in the FEDERAL REGISTER.

7. Section (h), formerly Section 732.13(g), provides that a program submission cannot be approved unless it can be approved in whole.

Section 732.13(h) also provides that the publication date of the Secretary's decision approving a program represents the official starting date for the State program. This language has been added to clarify the starting date which was not specified in the proposed regulations.

The comments that full legal authority be developed after Secretarial approval or alternately on the effective date of the program are beyond the scope of the Act and cannot be accepted. Section 503(a) of the Act requires that the State have the capability of carrying out the provisions of the Act and meeting its purpose through enacted laws. Proposed laws do not meet this standard. Additionally, Sections 503(b)(1), (2) and (3) of the Act require involvement of the public and EPA, as well as Agriculture and other Federal agencies in the approval process. Without fully enacted laws, meaningful comment and review would be impossible. Lastly, Section 503(b)(4) of the Act provides that the Secretary may not approve a State program until the State has the "legal authority" for enforcement of the environmental performance standards. These specific statutory directives clearly show that the State must have full legal authority prior to approval.

8. A new Section 732.13(i) has been added setting out the requirements for conditional approval. This Section allows the Secretary to conditionally approve a State program where the program is found to have minor deficiencies. The provisions of this Section limit the types of deficiencies and establish that unless they are corrected within a specific time, the program will be disapproved in whole by the Secretary. This disapproval will then represent the final decision by the Secretary and will constitute the final decision required under Section 732.13(f).

Although not specifically provided in the proposed regulations, the language in proposed Section 732.16 (Terms and Conditions) would have allowed conditional approval of State programs. Because of the various delays encountered by the Office after enactment of the Act, the Office believes that a limited form of conditional approval is authorized. The clear mandate of the Act, as expressed in Sections 101(f) and 201(c)(9), is that the primary responsibility for implementing the Act should rest with the States. Because of the time constraints now experienced by the States, the Office feels that this Section will give the Secretary some flexibility to conditionally approve programs where minor deficiencies must be overcome and where the State has been making a good faith effort to develop an acceptable program.

9. Several commenters argue that there is no authority to disapprove a program for minor deficiencies in certain parts. Other commenters claim that there is authority to approve programs that are missing certain parts. These comments contend that Section 503(c) of the Act contemplates approval or disapproval of a "portion thereof." The final regulations retain the requirements that final Secretarial approval of a State program be given only if the program can be approved in whole. This is specifically required by Section 503(a) of the Act which provides that a State must demonstrate the ability to carry out all the provisions "in whole or in part." Sections 503 (b) and (c) of the Act apply only to the Secretary's initial action. State programs or portions not approved must be resubmitted within sixty days. In fact, Section 504(a)(2) of the Act requires the Secretary to implement a Federal program if a State fails to resubmit an acceptable State program within sixty days of disapproval of a proposed State program. It is clear the Act contemplates approval of a total State program and not portions thereof. Partial approval, as suggested, would allow the States to implement only the most desirable parts of the program, leaving the more difficult, expensive, and politically undesirable actions to OSM. Partial approval could also lead to dual administration and likely chaos as well as creating judicial confusion (e.g., to whom should an operator appeal; which court has jurisdiction).

The commenters did present sound suggestions for not disapproving a State program because of minor defi-

ciencies. These comments stated that the proposed regulations would require disapproval and result in implementation of Federal programs where a State's good faith attempt to obtain approval is frustrated by a technical or minor deficiency which cannot be corrected before the deadlines for revision are passed. Because of the time constraints experienced by the States in developing acceptable programs and in response to these comments, the Office added Section 732.13(i) allowing for conditional approval of State programs.

10. Section 732.13(i) in no way allows approval of State programs that do not provide implementation and administration for all processes, procedures and systems required by the Act and these regulations. Instead, it only will be utilized upon a showing that certain deficiencies of a State program will be corrected expeditiously after condition approval. Failure of a State to make the corrections as established in the conditional approval shall result in automatic disapproval of the program and implementation of a Federal program under Part 736 of these regulations. Through Section 732.12(k) the Office retains as much flexibility as is legally possible in attempting to assist the States. There also should be a clear understanding that failure to meet the conditions and deadlines will require immediate implementation of a Federal program.

§ 732.14 Resubmission of State programs.

1. Section 732.14 provides that should the State program submission be disapproved under Section 732.13(f), the State must wait until after implementation of a Federal program before another program submission can be made. Section 732.14 also establishes that resubmissions shall be made and acted upon according to the same requirements, procedures and within the same timeframes except for specific dates as initial submissions. Authority for Section 732.14 is contained in Sections 504(a)(2) and (e) of the Act. Section 504(a)(2) of the Act requires that the Secretary implement a Federal program should a State fail to resubmit an acceptable State program within sixty days of disapproval of a proposal State program. Section 504(e) of the Act then provides that a State which has failed to obtain the approval of a State program prior to implementation of a Federal program, may submit a State program at any time after such implementation.

2. Several commenters objected to proposed Section 732.14. They contend that should a State submit its program prior to August 3, 1979, the Secretary would then make his determination of approval or disapproval prior to February 3, 1980, and second approval or disapproval prior to June 3, 1980. These commenters stated that a Federal program shouldn't be required until June 3, 1980, and that States ought to be given every opportunity to resubmit proposed programs right up until the time that a Federal program is required. The commenters contend that Section 504(e) of the Act means that a State which has failed to obtain the approval of a State program prior to implementation of a Federal program may submit a State program any time thereafter. Commenters also argue that a restriction on resubmitting State programs is contrary to the intent of the Act and not authorized. The Office has not accepted these proposals of their rationale. The mandate of the Act is specific. Section 504(e) of the Act provides "A State which has failed to obtain approval . . . prior to implementation of a Federal program may submit at any time *after such implementation*" (emphasis supplied). Congress provided in Section 503 of the Act two opportunities—an initial submission and one resubmission. After disapproval of a resubmission, a Federal program is mandated. The Office does not have to wait until June 3, 1980, to implement a Federal program; rather, that is the *latest date for implementation.*

§ 732.15 Criteria for approval or disapproval of State programs.

1. This Section establishes the criteria for approval or disapproval of State programs. The Secretary shall approve or disapprove a State program on the basis of information contained in the program submission and information gained at the public hearing and other information.

2. Sections 732.15 (a), (b), (c) and (d) list the requirements that the State program, State laws and regulations and State regulatory authority must meet before the Secretary can approve the program. The authority for these requirements is contained in Sections 503(a) and (b) of the Act.

3. Final Section 732.15 has been renumbered due to the deletion of proposed Section 732.15(b) and several other proposed Sections. This Preamble discussion identifies each deleted provision and lists the proposed and final Section numbering for provisions that have been retained or revised.

4. Section 732.15(a) sets forth the basic requirements contained in Section 503(a) of the Act.

5. Proposed Section 732.15(a)(1) requiring a good faith demonstration by the State has been deleted in the final regulations. Several commenters pointed out that no provision in the Act states or suggests that State permanent programs can be disapproved on a subjective evaluation by the Secretary of its good or bad faith concerning its interim program performance. Other commenters stated that "this purely subjective determination is not only unauthorized by the Act, it runs counter to the requirement in Section 503 of the Act that States demonstrate only the capability to carry out the Act." Another commenter points out that with the vagueness of the term it will be impossible to judge a program's effectiveness in a manner that will hold up in court if a program is denied and subsequently challenged. Other comments regarded the irrelevancy of an initial program evaluation, versus the ability to implement a permanent program, in that items such as money, manpower and legal authority, may not have been available in sufficient quantities during the initial program.

The Office has elected to delete proposed Section 732.15(a)(1). As noted in comments received, past performance is determined by factors which may not necessarily relate to future intentions or capabilities. Such good faith judgments would be difficult to administer consistently and objectively. Part 733.12 more appropriately provides for such evaluations where maintenance of a State program is not satisfactory.

6. In addition to the deletion of proposed Section 732.15(a)(1), proposed Sections 732.15(a)(3) and (a)(5) have been combined into Section 732.15(b) for reasons of clarity. Comments on these proposed sections will be discussed in Section 732.15(b).

7. Section 732.15(b) has undergone considerable revision and modification. This Section requires the Secretary to find that the State regulatory authority has the authority under State laws and regulations pertaining to coal exploration and surface coal mining and reclamation operations and the State program includes provision to accomplish 16 separate requirements. The specific requirements are listed as Sections 732.15(b)(1) through (16). Included in these requirements is a new provision concerning assistance to the State's small operators as required under Section 507(c) of the Act. This requirement for a small operator's assistance program was added in response to comments that pointed out that Section 507(c) of the Act required this provision. The content requirements for a State program submission have also been revised.

8. Proposed Section 732.15(a)(3) required that the State regulatory authority have full and exclusive authority under State laws and regulations to implement, administer and enforce the State program pursuant to Sections 503(a) and 731.12 of the Act and regulations respectively. The Preamble to the proposed regulations failed to explicitly establish this point. This gave rise to many questions from commenters asking whether authority for

various functions of the program could be vested in other contributing agencies. One comment suggested that proposed Section 732.15(a)(3) provide for the inclusion of the statutory authority of other State agencies having a delegated role in the State program to avoid duplication. The same comment stated that Section 503(a) of the Act, under provision (6), provides for such inclusion as does Section 731.14(f) of the proposed regulations. These proposals are not consistent with Section 503(a)(3) of the Act, however. The final regulations in Section 732.15(b) require the State regulatory authority to possess the authority required under a State program. Through memorandums of understanding and other agreements, other agencies may implement, administer and enforce parts of the program. However, the agency designated as the regulatory authority must possess all required authority.

9. Related to the issue of exclusive authority is the extent to which a State regulatory authority may delegate functions or responsibilities of an approved State program to another agency. The Preamble to proposed Section 731.14(m) stated: "The Office does not envision approval of a State program if the functions of inspection and enforcement are handled by staff other than regulatory staff. Inspection and enforcement must be incorporated within the regulatory authority."

Several commenters objected to this Preamble requirement. One State intends to satisfy the Act's coal exploration provisions for inspection and enforcement with personnel from other agencies. That State contends that this practice is already in place and working efficiently and for the Office to require a change would be unreasonable. Others pointed out existing practices of providing water quality inspection and enforcement with personnel from other agencies.

These suggestions have been accepted and the Office will allow the Regulatory Authority to delegate various functions to other agencies where a State can demonstrate that utilization of professional and technical personnel from other agencies is reasonable and practical and achieves the purposes of the Act.

The Office, however, strongly supports State efforts to develop programs with functions and responsibilities including inspection and enforcement capabilities unified within the regulatory authority. The ability to delegate certain functions under limited conditions does not in any way or manner alter the requirement in Section 732.15(b) that the designated regulatory authority must possess all required program authority.

10. Proposed Section 732.15(a)(3)(i) required as a condition for approval that the program include laws and regulations to implement, administer and enforce environmental protection performance standards consistent with Subchapter K of this Chapter. A commenter objected to this provision that laws and regulations are necessary to enforce all the performance standards of Subchapter K. The commenter suggests that this would result in States having to adopt irrelevant and inapplicable standards. The commenter asks that the word "applicable" be added to the requirement mandating that the State enforce all permanent performance standards of Subchapter K. This comment has been accepted and final regulation Section 732.15(b)(1) limits the requirement to applicable performance standards.

Addition of the word "applicable" will in no way relieve a State from its obligations to meet the intended goals of the Act. Inclusion of the word "applicable" relieves the State from its compliance responsibilities only if the State can demonstrate that there is no situation within the State which would be covered by the Act and regulations. For example, the special protections offered alluvial valley floors are only applicable west of the 100th meridian and therefore need not be included in programs submitted by States east of that meridian.

11. Proposed Section 732.15(a)(3)(ii) provides as criteria for approval that the State program include authority to implement, administer and enforce a permit system consistent with the regulations of Subchapter G of this Chapter and to require permit fees with each application such that the approximate costs or review, administration and enforcement of such permits are recovered.

Comments correctly pointed out that this criteria was not in accord with Section 507(a) of the Act. Section 507(a) establishes a maximum, but no minimum permit fee level to be required by State regulatory authorities. Proposed Section 732.15(a)(3)(ii) required that fee levels be sufficient to recover the approximate costs of review, administration and enforcement of such permits. Additional comments recommended that in order to be consistent with other requirements, permit fee provisions should be related to Part 771, General Requirements for Permits and Applications. The Office has accepted these recommendations and Part 771 now establishes fee requirements as provided in the Act. Specific fee requirements have been removed from final criteria in Section 732.15(b)(2).

12. Proposed Section 732.15(a)(3)(iii) established as criteria for program approval that the State control coal mining incidental to Government financed construction consistent with Part 707 of this Chapter. Several commenters asked whether the criteria should signify "notification" and not "control" of coal mining incidental to Government financed construction. They noted that Part 707 of the proposed regulations required that the regulatory authority be notified of coal mining operations incidental to Government financed construction while proposed Section 732.15(a)(3)(iii) required States to control such operations.

The comments were correct with regard to the proposed regulations. However, final Part 707 has been revised to require that any person extracting coal incident to Government-financed highway or other construction maintain certain information on site. The recommendation has therefore not been adopted but final Section 732.15(b)(4) has been revised and the regulatory authority must be able to require that any person extracting coal incident to Government financed construction maintain certain information on site consistent with 30 CFR 707.

13. The Office received many comments dealing with requirements contained in proposed Section 732.15 (a)(3)(vii) and (a)(5)(ii). These two provisions established specific requirements for inspectors of State regulatory authorities. Proposed Section 732.15(a)(3)(vii) stated that in addition to general issuance of orders by the regulatory authority, the State inspectors must have authority to issue orders, including issuance of notice of violations, cessation orders and show cause orders. Proposed Section 732.15 (a)(5)(ii) established that State law and regulations had to provide for the issuance of cease and desist orders by the State regulatory authority and its inspectors.

Most comments objected to the requirement that State inspectors specifically have these powers. Commenters pointed out that Section 521 of the Act vests such powers with the Secretary *or* his or her authorized representative. Others stated that at least one State had a constitutional restriction against inspectors having the proposed authority. Several commenters also recommended that proposed Section 732.15(a)(5)(ii) be revised to only require issuance of cease and desist orders by the head of the State regulatory authority or his or her authorized representatives.

While the majority of comments objected to the requirements for inspector authority, there were several comments in support of inspectors retaining the authority to issue cease and desist orders on site. However, a commenter also recommended that inspec-

tors not be given authority to modify or terminate notices of violation or cessation orders. The commenter stated that once such orders have been issued, the only recourse should be through administrative review as provided in the Act.

The suggestions to limit the authority of State inspectors have not been accepted by the Office. Section 521(d) of the Act specifically states that as a condition of approval of any State program, the enforcement provisions, at a minimum, must incorporate sanctions no less stringent than those set forth in Section 521 and must contain the same or similar procedural requirements. Section 521(a) (2) and (3) provide that the Secretary or his or her authorized representative *shall* "immediately" order a cessation of surface mining operations in the case of imminent danger to the health or safety of the public, significant imminent environmental harm, or failure to abate a violation. Issuance of a cessation order at a departmental level is inconsistent with this Section of the Act. The legislative history of the Act clearly establishes that the ability of field inspectors to issue cessation orders in the field is a critical and essential enforcement mechanism and one that is mandatory for each State program. H. Rep. 95-218, 95th Cong., 1st Sess. 129 (1977). The Office believes that properly trained and supervised inspectors are fully capable of making judgments appropriate to issue a cessation order. For further discussion of enforcement responsibilities, refer to Part 843 of these regulations.

The Office has not accepted the recommendation to limit the authority of field inspectors to modify or terminate notices of violation or cessation orders. Authority for this provision is contained in Sections 521(a)(3)(5) and 521(d) of the Act.

In order to clarify State inspector responsibilities, the Office has revised the content of Section 732.15(b) (7) and (8) (formerly Section 732.15(a)(3)(vii)) by stating the specific requirements in their respective Sections of the regulations. This Section now provides general provisions which incorporate the specific requirements of these other Sections. To clearly understand the specific requirements for State inspectors, reference must be made to specific provisions of Subchapter L of the regulations. Final Part 840 establishes State regulatory inspection and enforcement requirements to be no less stringent than Sections 518 and 521 of the Act and consistent with Part 843 of these final regulations. The Preamble to this Part explains that each State program *must* require issuance of cessation orders immediately after the inspector observes a condition or a practice which causes or can reasonably be expected to cause an imminent danger to health or safety of the public or a significant, imminent environmental harm to land, air or water, or upon the failure of an operator to comply with a notice of violation.

14. Proposed Section 732.15(a)(4) required that the State regulatory authority and other agencies having a role in the State program have and will continue to have sufficient technical and administrative personnel and sufficient funding to implement, administer and enforce the provisions of the program, the requirements of Section 732.15(b) (formerly Section 732.15(a)) and other applicable State and Federal laws. This Section has been renumbered Section 732.15(d) in the final regulations.

A number of comments recommended that the phrase ". . . and will continue to have . . ." be deleted from the criteria contained in this Section. Comments noted that a criterian of this kind would require the Secretary to predict the actions of future State legislatures and administrations. Such a predication would be subjective and of questionable reliability. The Office has accepted the recommendation and the rationale and has deleted the requirement from final Section 732.15(d).

A number of commenters objected to the requirement contained in proposed Section 732.15(a)(4) that State programs have sufficient personnel and funding to implement, administer and *enforce other applicable Federal laws.* Several commenters stated that they do not have authority to enforce all applicable Federal laws and expressed doubt about receiving such authority from their respective legislatures. One comment added that revised cooperative agreements required affected States to administer reclamation related laws. In response to this comment the Office believes that those Federal laws addressed in the regulations are, by definition, reclamation related, and are therefore applicable. It must be emphasized, however, that in establishing this requirment, the Office does not intend that States must have the capability to enforce all applicable Federal laws. Rather, it is recognized that some Federal laws will only require the State regulatory authorities to be capable of complying with and fulfilling any necessary responsiblities. In either case, the principal reason for including this requirment was and is to ensure that State programs have sufficient technical and administrative personnel and sufficient funding to satisfy the minimum obligations imposed by these applicable laws.

As is explained in further detail to the Preamble of Section 770.12 of the permits regulations, OSM can require that the States effect "coordination" in the Act's permitting process with requirments imposed upon an applicant under the Clean Air Act, Clean Water Act, Endangered Species Act, Archeological and Historic Preservation Act, and Fish and Wildlife Coordination Act. Ordinarily coordination will only require that the State consult with other agencies directly responsible for enforcing these Federal laws to insure that operations planned under permits will be conducted consistent with requirements imposed by the other Federal Laws. However, in some instances, certain other provisions of the regulations will impose upon State agencies the need to independently administer and enforce regulatory requirements derived, in part, from the Endangered Species Act and Archeological and Historic Preservation Act. See 30 CFR 761.11, 761.12, 776.12, 780.15, 784.20, 786.19(e). As to both Section 770.12 and those Sections of the regulations imposing direct responsibilities upon the State agency, the Office has determined that it has the authority to invoke these requirements. Their necessity is explained in the Preamble to the individual Sections involved. States must therefore obtain the necessary legislative authority needed to implement these requirments.

A few commenters recommended as additional criteria for approval of a State program that the State have sufficient legal capability to go along with the State's technical and administrative capability. A commenter stated that permanent programs without sufficient legal personnel obviously cannot meet the enforcement obligations under the Act and regulations. The Office has accepted this reasoning and Section 732.15(d) now requires sufficient legal capability as a criterion for approval. Final Section 731.14(j) has also been revised to require States to address the projected legal workload in program submissions.

Proposed Section 732.15(a)(4) did not establish any specific requirment for experience or expertise of the State regulatory authority. Several commenters stated that while Section 503(a)(3) of the Act requires the State regulatory authority to have sufficient administrative and technical personnel the regulations do not expound further upon their expertise or experience. One commenter stated that there are stringent requirements concerning technical personnel used by industry to comply with the regulations, and that it would appear absurd that industry incur the expense of employing professional people to prepare permit applications when the work will not be reviewed by persons having

proper experience and technical training.

Others stated that State regulatory authorities should be required to have registered professional engineers on their staffs. The commenters reason that since professional engineers must prepare many technical plans the review of these plans by the regulatory authority should only be performed by similarly qualified personnel.

The Office has not accepted these suggestions to expand the specific requirements for regulatory authority expertise. The inherent differences between State programs preclude establishing more detailed requirements. However, pursuant to Section 732.15 criteria, the Secretary is required to find that the State has sufficient personnel to implement, administer and enforce all provisions of the program. In reviewing program submissions the Office will evaluate program personnel against required program functions to ensure that the requirements of the Act and regulations can be met. This review will include an analysis of the numbers and types of personnel to ensure that the performance standards in Subchapter K can be properly incorporated into permits and that permit applications and approved permits can be properly field checked, inspected and enforced. Many of the performance standards are highly technical in nature. This requires that a State program include sufficient technical personnel to understand the requirements and ensure incorporation of the requirements in all permits. At a minimum the proposed staff should have the capability to deal with the land use, engineering, hydrologic, geologic, agronomic and administrative requirements of the Act and regulations.

The proposed staff should also have the capability to deal with the more specialized areas of a State program such as blasting. In addition Section 521 of the Act requires the regulatory authority to determine steps necessary to abate violations and imminent hazards and to list these steps in any orders or notices that are issued to operators. This requirement means that regulatory authorities should have personnel experienced in mining and reclamation matters who can make these required determinations.

15. Proposed Section 732.15(a)(5), now renumbered as Section 732.15(b), stated that the laws and regulations must be in effect at the time of a complete program submission. The Office received many comments objecting to this requirment of full authority at time of submission. As previously discussed in the beginning of Part 732, this requirement has been revised.

16. Proposed Section 732.15(a)(5)(iv) required that a State provide protection for employees of the State program in accordance with protection afforded Federal employees under Section 704 of the Act. Several commenters stated that this requirement was not justified under the Act, nor specifically required. These suggestions have not been accepted. The Act contains many provisions which clearly establish that State programs are to address all requirements of the Act. Section 503(a) specifically requires that the State program demonstrate that the State has the capability of carrying out the provisions of the Act. The Office interprets this to mean carry out all the provisions of the Act.

17. One commenter recommended that State programs include judicial review similar to that required in the Act. This comment has been accepted and final Section 732.15(b)(15) has been revised to require that State programs include judicial review in accordance with Section 526 of the Act.

18. Proposed Section 732.15(a)(5)(v) required that the State law and regulations provide for public participation in the development, revision and enforcement of State program regulations and that the State program be consistent with public participation required in the Act and regulations of this Subchapter.

A commenter stated that citizen's rights granted under Federal law and regulations may not be abridged by State programs and that no State program can be approved which does not provide at least the same level of citizen participation in all phases of the State program as does the Federal statute and regulations. The commenter further noted that the Office seemed to accept this basic principle. However, the commenter stated that in an area as controversial as citizen rights, it is incumbent to spell out in the final regulations the requirements for "citizens rights" to be certain there is no confusion and that these rights actually end up in the State program. The alternative offered by the commenter is that criteria for approval of a State program regarding public participation in proposed Section 732.15(a)(5)(v) establish as minimum requirements the following:

(a) State law must allow the citizen at least as much access to the mine site as allowed under the Federal law.

(b) State law must authorize compensation for citizens for participation in all adjudicatory (in accordance with 43 C.F.R. 4.1284) and non-adjudicatory rulemaking, permit hearing, or other similar proceedings held by the State. The State should also be required to budget adequate monies for this participation.

(c) State law must provide citizens with the right to request inspections and participate in the resulting inspection. State law cannot weaken the rights of citizens under Federal law, as established by Section 521 of the Act including the right to review established by Section 517(h)(1) and (2).

(d) State law must allow fee awards against the State and against permittees in accordance with 43 C.F.R. 4.1284.

(e) The State must establish an administrative review procedure similar to that contained in Section 525 of the Act, 43 C.F.R. 4.2 *et seq.*, and 30 C.F.R. 722. This system must allow for at least the same citizen access to the administrative review process as exists under federal law. For example, there must be administrative procedures for review of civil penalties and not simply access to the State court system as urged by at least one State.

(f) The State must allow citizens as much access to the State courts as the Federal law allows to Federal court in areas such as citizen suits, damage actions, review of enforcement proceedings, rulemakings, permit applications etc.

(g) The State must provide citizens with as much access to information regarding surface mining and reclamation operations and regulatory authority activities as is permitted under Federal law to federal information and documents.

Another commenter says the regulations fail to specifically explain what States must do to ensure the citizen participation specifically provided for in the law. Without minimum criteria for citizens' rights, State programs may fail to give the public the same access to the regulatory process which the Act envisioned. This commenter suggests the new requirements for public involvement in inspection of mine sites, civil penalty assessment, access to information, permitting, bonding and designation of lands unsuitable for mining.

Another commenter says the word "consistent" fails to clearly require any level of public participation and suggests that no State program be approved which provides for less public notice and participation than is proposed under the regulation for use of Federal lands.

Another commenter says the final permanent regulations should contain provisions establishing a procedure for involving citizens in the drafting of State regulations. Another suggests creation of a citizen's advisory council whose membership shall be drawn from names submitted by conservation, environmental and citizen groups Statewide.

Another commenter wants language added guaranteeing the fullest public

participation through public hearings on permit applications and other mechanisms in the permit process and in designation of lands unsuitable for mining. Another commenter says that the Office and the States must get beyond the concept of the public hearing as the appropriate vehicle for citizen input. This commenter suggests establishing a procedure for involving citizens in drafting State programs and requiring program data allowing evaluation of State responses to citizen participation. This commenter also suggests that educational programs be established to inform the public of their rights.

Another commenter urges more effective public participation mechanisms than are provided in the regulatory proposal and requests that the regulations be expanded to make clear that public participation means more than public notice and hearings. Another commenter requests that citizens be permitted to accompany State inspectors during their visits to the mine sites.

Another commenter states that additional minimum requirements should not be established by Federal regulations for mandatory inclusion in a State regulatory program. This commenter summarizes by saying that States should be allowed to devise their own procedures for hearings so long as they do not violate due process requirements.

Most public comments generally speak to expanding requirements for public involvement in the various Sections of Suchapter C. After careful consideration of each comment, OSM has not accepted the proposals to expand on the public participation requirements. The Office has concluded that Section 732.15(b)(10) (formerly Section 732.15(a)(5)(v)) provides adequate assurance for public participation in the development, revision and enforcement of State regulations and the State program consistent with public participation required in the Act and regulations of this Chapter. This language gives the Office flexibility in working with the States to develop suitable public participation procedures and programs and gives States the flexibility to select methods best suited to their individual conditions and needs.

However, the Office believes that the following ten items are required by the Act and should be included in a State program:

1. Development of regulations pursuant to a State program.

2. Development of the State program.

3. Approval and disapproval of permits.

4. Inspections and enforcement including the citizen's right to request inspections and including the right for citizens to accompany State inspectors onto the mine site.

5. Release of performance bond.

6. Designating areas unsuitable for mining.

7. Administrative and Judicial Review that is in accordance with that required in Sections 525 and 526 of the Act and consistent with the Secretary's regulations.

8. Citizens' suits in accordance with Section 520 of the Act.

9. The State program also must allow citizens as much access to program information and records as is permitted under the Act.

10. The State law must provide for the authorization of the award of costs and expenses in administrative and judicial proceedings as provided under Section 520 (d) and (f) and 525(e) of the Act and 43 CFR Part 4.

19. Proposed Section 732.15(b) established that the Director may provide for other criteria necessary to meet the provisions of this Subchapter in order to determine whether a State has the capability to carry out the provisions of the Act and this Subchapter. There were many adverse comments regarding this provision. Commenters argued that unless the regulations specified criteria, the States cannot be certain that additional criteria will not be requested by the Office. Other commenters contended that the ability to establish additional criteria during the review process ". . . denies the State the use of time constraints placed on the Director for completing his review." In addition several comments maintain that no such discretionary authority is provided for in Section 503 of the Act which sets forth the basic criteria to be used by the Director in evaluating proposed State Programs. These recommendations and suggestions have been accepted and proposed Section 732.15(b) has been deleted.

§ 732.16 Terms and conditions for State programs.

1. This Section provides the Director with authority to establish terms and conditions for the implementation, administration and operation of a State program as necessary. Authority for this Section is contained in Section 201(c) of the Act. Proposed Section 732.16 listed three types of terms and conditions that could be established by the Director including a system for reporting information collected by the State, requiring consultation with the Office on a regular basis and providing the Office with access to books and records. Proposed Section 732.16(b) allowed the Director to modify the terms and conditions of the State program from time to time to reflect changes in the regulations of this Subchapter, the conduct of the program or the coordination with the Office.

2. Several commenters stated that the lack of an established set of terms and conditions in proposed Section 732.16 placed State regulatory authorities in an unfair position subjecting them to any provision which the Director may elect to establish. One commenter stated that any additional information requirements should be explicitly stated in the regulations. In addition, several commenters questioned the statutory authority of the Director to modify terms and conditions of the program after final approval. Another commenter stated that Section 732.16(a) is totally inadequate. That commenter would use this Section to require State programs to be revised to reflect subsequent Federal developments. The Office has chosen to accomplish this function under Section 732.17 which requires States to amend their programs whenever there are changes in the Act, regulations, State law, etc.

3. Another commenter states that modification of terms as provided in proposed Paragraph (b) should be established only if it can be approved by both parties. Another commenter suggests that changes in terms should require public hearings similar to those for adoption of regulations unless they are for minor administrative reporting items. Another commenter suggests modifications only after complying with State program amendment procedural provisions.

The Office has accepted the rationale of the comments and has deleted proposed Paragraph (b) allowing modification of terms and conditions from time to time from final Section 732.16. Following program approval and program implementation, changes in the Secretary's regulations that require changes in the State program will be dealt with through an amendment. See the Preamble for Section 732.17 for further discussions on amendments.

4. Final Section 732.16 combines proposed Sections 732.16(a)(1) and (3). The Office also has deleted the provision concerning consultation with the States. The Office does not believe that there is a need to establish this requirement in a formal regulation. The Office recognizes that consultation with the States is one of the Office's oversight responsibilities and that it is best to keep these consultations on an informal basis.

§ 732.17 State program amendments.

1. This Section sets forth the amendment provisions for the State programs. Amendments may be initiated by the State or by the Office. Amendments under this Section are available so that an approved State program

may be adjusted to meet changes in the Act or regulations of this Chapter, to meet changes in staffing, budgets and resources of the State regulatory authority and to meet changes in the number or size of State mining operations. Amendments are not intended for use by the Office to address inadequate implementation, administration or enforcement of State programs. Inadequate administration of the State programs will be dealt with according to provisions of Section 733. Authority for this Section is derived from Sections 201(c), 503, 504 and 505 of the Act which authorize the Secretary to administer the programs for controlling surface coal mining and reclamation operations.

2. Section 732.17(a) defines the term "amendment." In the proposed regulations, a State program amendment was a written alteration of the provisions, terms or conditions of the approved State program. Several commenters recommended changing the description of a State program amendment in proposed Section 732.17(a) by deleting the words "provisions, terms and conditions" from this provision. These words were viewed by the commenters, at a minimum, as unnecessary qualifiers to the "approved State program" and "improperly restrictive" at worst. This suggestion has been adopted and final Section 732.17(a) identifies a State program amendment as any alteration of the approved State program whether accomplished on the initiative of the State regulatory authority or the Director.

3. Section 732.17(b) requires the State regulatory authority to notify the Director in writing of any significant events or changes which will affect the implementation, administration or enforcement of the State program. Sections 732.17(b) (1) through (7) identify specific events or changes which require notification.

The Office has made several editorial changes in this Section. Written notification is now required to be made to the Director, not the Regional Director. This change has been made so that the Director is involved in these matters at the earliest stage. Similar revisions have been made in Sections 732.17 (c) and (f). The Office has also deleted all references in Section 732.17(b) to responsibilities of the Office. These responsibilities have been set out in new Section 732.17(d).

Several commenters on Section 732.17(b) stated that the minimum events or changes set out in (b) (1)–(7) do not significantly amplify the broad language of Section 732.17(b) and should be deleted. They stated that the selection of "significant changes" should be determined by the Regional Director and the State regulatory authority. Another commenter suggested that the qualifier "substantial" be added to the sentence preceeding Sections 732.17(b) (1) through (7). This would ensure that unimportant changes need not be included. Another commenter suggested adding the word "significant" to Section 732.17(b)(6) so that it provides: "significant changes in funding or budgeting . . ." This was suggested to ensure exclusion of unimportant item changes. This comment pointed out that the usage of "significant" only in Section 732.17 (b)(7) implies that Sections 732.17(b) (1-6) include changes that are not limited to significant changes.

Another commenter suggested that Section 732.17(b)(4) be changed by substituting the phrase "job functions" for the proposed language "staffing" because numerous staffing changes are likely to occur which may not affect actual job functions. This proposal would then eliminate reporting of insignificant program alterations.

Final Section 732.17(b) has been revised after consideration of the preceding comments. The qualifier "significant" has been added to proposed criteria for notification in Sections 732.17(b) (4) and (6). The recommendation to delete items (1) through (6) has not been accepted. While this specific criteria may not significantly amplify the broad language of Section 732.17(b), the Office believes that items (1) through (7) provide meaningful guidance to the types of changes which may require an amendment. The Office does not believe that the inclusion of this criteria will improperly restrict the discretion of the Office to determine amendable changes. Lastly, the suggestion to substitute the phrase "job functions" has not been accepted. The Office has, however, revised this provision to require notification of "significant" changes in staffing and thus allows OSM to keep track of current staffing levels. The term "job functions" does not have this same connotation and is therefore considered inadequate.

5. Section 732.17(c) has remained the same except for the editorial change substituting Director for Regional Director. Section 732.17(c) requires the Director to notify the State regulatory authority within 30 days of notification of any significant change or event that will require an amendment.

6. Section 732.17(d) requires the Director to promptly notify a State regulatory authority of all changes in the Act and the Secretary's regulations which will require an amendment to the State program. This Section was added because of the modification in proposed Section 732.17(b). Section 732.17(e) sets out the conditions and events which require program amendments.

7. Several comments proposed deleting language in proposed Sections 732.17(d) (1) and (2) "to eliminate redundancy and improve clarity . . ." Specifically, they recommended that State program amendments may be required:

(1) When as a result of changes in the Act or regulations of this Chapter, the approved State program no longer meets the requirements of the Act or the requirements of this Chapter; . . . and

(2) When such conditions or events indicate that the approved State program no longer meets the requirements of the Act or the regulations of this Chapter.

Although not adopting the verbatim language proposed by commenters, the Office has accepted the suggested need for clarification of this Section. Proposed Section 732.17(d)(1) has been revised and final Section 732.17(e)(1) establishes that State program amendments may be required when, as a result of changes in the Act or regulations of this Chapter, the approved State program no longer meets the requirements of the Act or this Chapter. Proposed Section 732.17 (d)(2) has undergone an editorial change and has been more clearly set forth in Sections 732.17(e) (2) and (3) of these final regulations. The final regulations establish that amendments may be required when conditions or events change the implementation, administration or enforcement of the State program (Section 732.17(e)(2)) and when conditions or events indicate that the approved State program no longer meets the requirements of the Act or this Chapter (Section 732.17(e)(3)).

8. Section 732.17(f), formerly Section 732.17(e), provides that if the Director determines a program amendment is needed, the State regulatory authority has 60 days after notification to submit an amendment. The time limit for submission has been changed from 10 days in the proposed regulations to 60 days in these final regulations. The Office received numerous comments objecting to the 10-day time frame. A commenter maintained that the 10 day limit does not allow sufficient time for legislative action. The State would therefore be compelled to adopt the Federal language verbatim, this would effectively undermine the primary responsibilities granted the States under Sections 101(f) and 201(g) of the Act. The Office agrees with the comments received on this Section and has adopted a 60-day deadline for submission of a written amendment. This new timeframe should allow the States sufficient time to draft the appropriate changes.

9. Several commenters recommended that States submit "a written strategy

designed to implement such an amendment, thus enabling the States to make the program amendment process responsive to (their) constitutional procedures . . . " Other commenters suggested that the Office delete a specific submission deadline. This would be replaced by requiring a meeting between the Regional Director and the State within 30 days of notification in order to mutually determine the scope and schedules for deadline submission.

The final regulations do not adopt these suggestions. The Office feels that an established timeframe is both useful and necessary to ensure that State programs take the necessary measures to meet all the requirements of the Federal Act and regulations as soon as possible. Should the amendment require changes in State laws or regulations, the submitted amendment may contain proposed language and a timetable for expected enactment and inclusion in the State program.

10. Final Section 732.17(f)(1) states that the director will commence proceedings under Part 733 should the State fail to propose an amendment within 60 days from receipt of the notice. Final Section 732.17(f)(2) provides procedures, time schedules and criteria for approval or disapproval of an amendment. The Office is required to give notice and hold a public hearing following opportunity for review and comments by the public. The procedures and criteria for approving or disapproving an amendment will be the same as required for a program submission and includes opportunity for the State to submit a revised amendment should the Director initially disapprove the amendment.

The proposed Section 732.17(d) did not distinguish general State program design changes involving staffing, procedures, budgeting and resources from changes in State program authority involving laws and regulations. According to the proposed regulations, any change or potential change necessitated notification with a subsequent determination by the Regional Director as to whether an amendment would be required.

Several commenters found proposed Section 732.17(d) confusing and recommended that the amendment procedures and requirements be more fully explained. In response, the Office has revised this Section to distinguish between program design and program authority changes. The final regulations in Section 732.17(e) retain the determination as to whether amendments will be required for changes to the design of State programs. With regard to changes in State program authority, however, an amendment is always required. This requirement is specifically set out in a new Section 732.17(g).

11. Final Section 732.17(g) requires the State to submit an amendment for proposed changes to State laws or regulations that make up the approved State program. This Section also establishes that no changes to laws or regulations shall take effect for purposes of a State program until approved as an amendment. Authority for this Section is contained in Sections 102(a), 201(c) and 503 of the Act to ensure that a nationwide program is maintained after program approval. This additional Section has been added because the proposed regulations did not provide effective procedures for assuring that the program would not be weakened after its initial implementation. Section 503 of the Act also establishes that a State may not exercise jurisdiction under the Act unless the State program is approved by the Secretary. Thus, any changes to the approved State program should not be enforceable by the State until also approved by the Office as part of the State program.

12. Several comments stated that the amendment process in proposed Section 732.17 should be part of maintaining State programs, not part of the overall approval/disapproval process. A comment suggested relocating "appropriate amendment provisions" into Section 733.12. The commenter pointed out that the Act provides no specific authority for State program amendments. Thus, significant changes should be addressed by Sections regarding Federal enforcement or withdrawal of programs rather than by Section 732.17, as proposed. The comment added that prompt notification of program changes and submission of proposed amendments to the Regional Director are an administrative burden and that the procedure of outright disapproval and withdrawal is preferred.

The Office has decided not to move the amendment procedure to Section 733. State program amendments are necessary to address actual changes in the approved State program submissions which may affect implementation, administration or enforcement of that program. Part 733 is designed to address the States' actual implementation and administrative efforts. The regulations establish that the amendment procedure in Section 732.17 provides for necessary change to the program itself and not the State's effort to run the program. The program includes statutes, regulations, authority, procedures, systems, personnel and physical resources and funding.

PART 733—MAINTENANCE OF STATE PROGRAMS AND PROCEDURES FOR SUBSTITUTING FEDERAL ENFORCEMENT OF STATE PROGRAMS AND WITHDRAWING APPROVAL OF STATE PROGRAMS

This Part describes the maintenance of State programs and criteria and procedures for substituting Federal enforcement of State programs and withdrawing approval of State programs. Authority for this Part is derived from Section 504(a)(3) of the Act which requires the Secretary to implement a Federal program if the State fails to implement, enforce or maintain its approved State program. In addition, Sections 504(b) and 521(b) of the Act require the Secretary to provide enforcement of that part of a State program not being enforced by the State.

§ 733.1 Scope.

This Section remains unchanged from proposed regulations.

§ 733.4 Responsibilities.

1. Section 733.4(a) has been changed to be consistent with other Sections of the regulations detailing the responsibilities of the Secretary and the Director. Under these final regulations the Director is responsible for evaluating State programs and implementing direct Federal enforcement where the State regulatory authority is not enforcing a State program.

2. Section 733.4(b) now provides that the Secretary is responsible for withdrawing approval of State programs. Under the proposed regulations withdrawal of approval of State programs was made by the Director. For further discussion, see the Preamble for Section 730.4.

3. A new Section 733.4(c) has been added describing the Secretary's responsibility for withdrawing approval of State programs if substituted Federal enforcement will not be an effective remedy.

4. Section 733.11 provides the general requirements for maintaining State programs and remains essentially unchanged.

5. Section 733.12 has been restructured and new procedures and requirements have been added. Proposed Section 733.12(a) has been divided into two paragraphs specifying when the Director must evaluate a State pro-

6. Section 733.12(a)(2) has added the requirement that all persons requesting evaluations set forth a concise statement of the facts in their request. To avoid frivolous complaints, the Director must verify these facts prior to making an evaluation decision. This change has been made in response to

comments which criticized the proposed evaluation provisions as being cumbersome and obstructive since under the proposed regulations any request could trigger an evaluation. A suggestion for a more formal type of evaluation procedure involving a petition, publication in the FEDERAL REGISTER and formal response has not been accepted, however. Such formal procedures would be premature and burdensome and might jeopardize the ability of the Office to investigate allegations. A part of the comment requesting a 60-day written response has been accepted, however. This change will ensure speedy resolutions of the requests. If the Director is unable to verify the allegations or upon verification has no reason to believe that a program evaluation is necessary, his decision in writing to the requestor will be the final decision by the Department.

7. Many comments on Section 733.12 focused upon the evaluation responsibilities assigned the Regional Director. One commentor suggested that the Regional Director should not be involved in the decision-making process since he or she might be susceptible to local political pressure. Some commentors felt that the Regional Director might be part of the problem with the State's implementation, administration or enforcement of its program. Suggested alternatives ranged from withdrawing all responsibilities from the Regional Director and having the Secretary or the Director make the final decision to keeping the Regional Director's authority but instituting formal procedures and public hearings when the decision-making process reached the Director.

In response to these comments, the Office has revised the responsibilities in Section 733.12. The Director is now responsible for evaluations and the procedures leading up to and including initiation of direct Federal enforcement. These responsibilities may, however, be carried out by the Regional Director under administrative procedures of the Office. The Director will be responsible for assuring that a local or regional bias does not interfere with either evaluations or enforcement proceedings. The Director will also be responsible for initiating Federal enforcement. The Secretary, however, will be responsible for withdrawing approval of a State program after receiving a recommendation from the Director as discussed in the Preamble to Section 730.4.

8. Several commentors suggested that the Director should have the obligation in Section 733.12 not only to identify the parts of the State program which he believes are not being administered effectively but also to identify the evidence or reasons. Without this basis, it is argued, the State regulatory authority cannot evaluate the Director's contention that the program is not being administered effectively. Similarly, another commentor suggested that this Section should specifically limit disapproval or substitution decisions to specific violations.

All charges made by the Office will be adequately documented and supported. This information will be discussed during the informal conferences described in Section 733.12(c) and will be required during the public hearing described in Section 733.12(d). To ensure adequate notification to the State, Section 733.12(b) has retained the requirement that the Director notify the State in writing specifying his reasons for believing why the State program is not being maintained, administered or enforced effectively. The Office believes that this requirement includes identification of evidence. The suggestion that action be linked to specific violations has been rejected, however, since there are many actions other than violations, such as failure to administer a program for the designation of lands unsuitable for mining, which may require Federal action.

9. Several comments recommended that State program evaluations include a provision requiring a minimum number of Federal inspections per site annually. One comment proposed conducting one unannounced Federal inspection per year, not only to check State regulatory performance, but also operator compliance. Another comment suggested a minimum of two Federal inspections per site.

This suggestion has not been accepted for three reasons. First, such a provision is not required by the Act; second, Section 733.12(a) as drafted will not preclude evaluation inspections by the Office, and third, Section 842 of these regulations already establishes provisions and requirements for Federal inspection.

10. Section 733.12(c) formerly Section 733.12(b)(1), has been changed in response to one commenter who stated that the time periods outlined in proposed Section 733.12(b)(1) were too restrictive. Proposed Section 733.12(b) provided that when the notice was given, the Regional Director was to specify the time period for accomplishing the remedial action deemed necessary. The commenter contended that the time period should be reasonably long enough to permit the State to comply. It was recommended that the Section be revised so that the 15- and 30-day time periods for requesting a conference and a hearing not begin until after expiration of the time period specified by the Director for compliance. The commenter stated that most time periods given to accomplish remedial action will be longer than 30 days and, therefore, the proposed regulation provides for hearings before the State has a chance to make the necessary changes. This approach is restrictive and unfair to a State that is attempting in good faith to comply.

In response to this comment, Sections 733.12 (c) and (d), formerly Sections 733.13(b) (1) and (2), have been revised so that, upon request, an informal conference may be held within 15 days and a second informal conference may be held when the time period for remedial action expires. Additionally, the 30-day time limit for a public hearing will not begin until expiration of the time given for remedial action. These new procedures should allow both parties greater flexibility in resolving their problems before resorting to the formal public hearing procedures in Section 733.12(d).

11. Section 733.12(e), formerly Sections 733.12 (c) and (d), describes the options available to the Director upon finding that a State has failed to administer its approved program effectively. The Director shall hold a public hearing under final Section 733.12(d) prior to deciding which remedial action, if any, is appropriate.

One commenter suggested that the Office should provide for limited cross examination or questioning of those testifying at the public hearings. The commentor stated that interested citizens and groups should be provided the opportunity to question and that unless questioning is provided, those testifying are apt to make general self-serving statements that go unchecked. It was suggested that the opportunity for questioning will ensure better quality testimony by all involved. The commenter also advocates that limited cross examination be included in the regulations. It was also suggested that the Office establish detailed standards for conducting public hearings. The commenter advocated quasi-adjudicatory provisions for these hearings. The State, it was noted, has the burden of proving that it has the capacity and the intent to enforce its program and therefore should be allowed to present information on the issue in the manner it chooses subject to the authority of the hearing officer to regulate the hearing. Thus, the State might have officials testify and submit documentary evidence. If the State does provide oral testimony, the hearing officer should be empowered to allow limited questioning by interested parties in those specific situations where the need is demonstrated. The commenter also advocates allowing interested parties to present both oral and documentary evidence on the issues.

The Office has elected not to establish such procedures within the regu-

lations. The policy of the Office for the public hearing under final Section 733.12(d) is that no questioning of those testifying will be allowed but that rebuttal by interested persons will be permitted. The rationale for this policy is explained in the Preamble to Section 732.12(b) regarding public hearings for State program submissions.

12. Sections 733.12 (e) and (f) have been revised to delineate the responsibilities of the Director and the Secretary regarding implementing Federal enforcement and withdrawing approval of a State program. For a discussion of the comments and these changes, see the Preamble to Section 730.4.

13. The Office received one additional comment on Sections 733.12 (d) and (e). This commenter suggested that separate administrative hearings be developed for each remedial action. The remedial actions, it is argued, vary greatly and that due to the seriousness involved in withdrawing a State program, the Office might be reluctant to schedule a public hearing where this possibility exists. The commentor believes that separate hearings will allow the Office more freedom to apply the less drastic action of initiating Federal enforcement. This proposal was not accepted because implementation of two hearings would be both cumbersome and difficult. Additionally, it would commit the Office to deciding which remedy is appropriate prior to hearing any evidence or testimony. The Office believes the present system allows the Director adequate flexibility to choose the appropriate remedy.

14. Section 733.12 (g) and (h), formerly Section 733.12 (e) and (f), have been modified slightly to reflect the changes discussed under Section 730.4. These Sections now specifically set forth the procedures for either substituting Federal enforcement or withdrawing approval of a State program. Regarding the question of withdrawing approval of a State program, one commentor stated that the Office lacked authority under the Act to take this action.

The Office believes, however, that there is ample authority in the Act. Section 504(a)(3) of the Act and Senate Report No. 93-402 clearly indicate that Congress intended that the Secretary ultimately promulgate and implement a Federal program rather than enforce specific areas of a State program.

Section 504(a)(3) requires that a Federal program be implemented no later than June 3, 1980, if a State fails to implement, maintain or enforce its approved State program. The time deadline is viewed as the initial date that either a Federal or State program must be effective, not as a limitation on the authority of the Secretary or the Office to withdraw approval of a State program and replace it with a Federal program.

The final regulations also require the Director to substitute Federal enforcement either before or at the same time he recommends withdrawal of approval to the Secretary. This requirement solves the commenter's problem concerning a gap of authority between withdrawal and implementation of a Federal program.

15. Another commenter stated that the entire concept of partial withdrawal should be deleted because it contemplates concurrent administration of a program. The commentor continues that partial withdrawal allows the Office to pick and choose which portions of a State program it wishes to administer without having to accept responsibility for administering an entire program for a State.

The provision allowing partial withdrawal of a State program has been retained in the final regulations and is considered a necessary response for more serious breakdowns in administration where only a certain part of the program is affected. Authority for this requirement is contained in Sections 201(c), 503, 504 and 521 of the Act.

16. Two commenters suggested that the failure of a State to administer its program effectively will be a matter of high seriousness with the potential for substantial harm to the environment and the public. Thus, the constraints upon a rapid substitution of Federal enforcement should be as few as possible. These commentors recommended adding language to Section 733.12 allowing immediate withdrawal of State program approval when failure in administration results in a serious threat to the environment or public.

This proposal is not accepted since it is outside the authority of the Act. Sections 504(b), 521(a) (1) and (2) and 521(b) of the Act specifically require certain procedural steps to be taken before the Secretary may withdraw approval of a State program. Additionally, the environmental concerns expressed by this comment are addressed adequately by Section 843.11.

17. Several commenters noted that there is no provision in Section 733.12 for judicial review of the Director's or the Secretary's decision to withdraw approval of the State program or to substitute Federal enforcement. The commenters stated that this provision should be added since Section 526(a)(1) of the Act clearly provides for judicial review in a case such as this. This suggestion has not been accepted since Section 521(a)(1) of the Act clearly provides that final decisions of the Department are subject to judicial review. The Office does not believe that there is a need to expand on this review in Section 733.12.

§ 733.13 Procedures for substituting Federal enforcement of State programs or withdrawing approval of State programs.

1. Section 733.13 remains essentially unchanged. Hearing transcripts, written presentations and comments have been added as sources for evaluating the administration of a State program for purposes of determining whether to substitute direct Federal enforcement of the State program or to withdraw approval of all or part of the program.

2. One commenter questioned the brief and general criteria for substituting Federal enforcement or withdrawing approval established in proposed Section 733.13. The commenter recommended that the regulations contain more detailed specific criteria for invoking each remedial action.

The Office did not accept this proposal since the general criteria established in Section 733.13 meets the purposes of the Act and allows and requires the proper remedial action to be invoked.

PART 736—FEDERAL PROGRAM FOR A STATE

Authority: Sections 102, 201, 405, 501, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 521, 522, 525 and 705 of Pub. L. 95-87.

The statutory authority and basis and purpose of this Part were explained in the Preamble of the proposed rules at 43 FR 41679-41681 (September 18, 1978), which is incorporated herein by reference. Part 736 sets forth the standards and procedures by which the Office will, if necessary, establish Federal programs under Section 504 of the Act to regulate coal exploration and surface coal mining and reclamation operations on non-Federal and non-Indian lands within a State. It is distinguished from Subchapter D of this Chapter, which sets forth standards and procedures for the regulation of coal mining on Federal lands.

Certain nonsubstantive changes of an editorial nature have been made in this Part for clarity. Also, the locations of certain Sections that appeared in the proposed draft have been changed. Sections 736.4(c) and 736.15(b) are now located in Part 771, "General Requirements for Permits and Applications," since they deal more with permits than with a Federal program. Since proposed Section 736.15(b) was transferred to another Part, Section 736.15(a) is now labeled Section 736.15.

Another change occurred in the numbering of Section 736.13. In the

proposed draft, Section 736.13 contained Paragraphs (c)(1) (i) and (ii), (c)(2), (c)(3), and (d). In the final rules, Paragraphs (c)(1) (i) and (ii) have been combined into Paragraph (c). Paragraph (c)(2) has been redesignated Section 736.13(d) and proposed Paragraph (d) is now Paragraph (e). These changes were made for editorial reasons to consolidate information.

Lastly, a new Section 736.12(a)(7) has been added to alert the public concerning opportunities to submit data and comments on the proposed promulgation or revision of a Federal program as specified in Section 736.13(b).

Reference is made in Part 736 to Subchapter M, which deals with the certification and training of blasters. However, Subchapter M is to be republished as a proposed rule before promulgation as final at a later date, and all references within Part 736 to Subchapter M are to that Subchapter when promulgated as final. No technical literature was used in preparing this Part.

General

One issue raised in this Part concerns which official should be responsible for promulgating, implementing, revising, and terminating a Federal program. This issue related specifically to Sections 736.2, 736.3, 736.4(a), 736.4(b), 736.11(a)(1), 736.11(a)(1)(ii), 736.11(a)(2), 736.11(a)(3), 736.11(b), 736.11(c), 736.12, 736.13(a), 736.13(c)(3), 736.14(a), 736.14(b), 736.15, 736.17, 736.21(a), 736.21(b), 736.22(a), 736.23(a), 736.23(b), 736.24(a), 736.25(b), 736.25(b)(1), and 736.24(b)(2). The alternatives considered were either the Secretary or the Director. One commenter felt that the Secretary should fulfill these functions, since Section 504 of the Act specified the Secretary.

OSM adopted the alternative of the Director. It is organizationally and administratively logical to delegate this power. Section 201(c) of the Act provides that the Secretary will act through the Office. The Secretary has delegated the responsibility to the Director of the Office while reserving the right to approve State programs. (See Departmental Manual Release, U.S. Department of the Interior, 216 DM 1.1 November 9, 1977.)

§ 736.11 General procedural requirements.

Five issues were raised concerning Section 736.11(a).

1. One issue is whether the Office should delete the requirement of June 3, 1980, for the promulgation and the implementation of a Federal program.

The alternatives considered were either to require June 3, 1980, as the date for promulgation and implementation or to extend the time period to December 3, 1980. Commenters felt that the deadline should be delayed.

The Office selected the alternative of June 3, 1980, since Section 504(a) of the Act requires the Secretary to promulgate and implement a Federal program for a State no later than 34 months after the date of enactment of the Act, which would be June 3, 1980.

2. Another issue concerning this Section is whether a Federal program should be promulgated within 60 days after a decision under Part 733 to withdraw a State program. The alternatives considered for this issue are either to require promulgation of a Federal program within 60 days after a decision to withdraw a State program or to utilize the longer time period, as proposed in the rules. One commenter proposed that Section 736.11(a)(2) be redrafted to require the Secretary to promulgate a Federal program pursuant to Section 504(a)(3) of the Act if, within 60 days of a decision under Part 733, the State does not have or has not demonstrated the intent and capability to enforce its program.

The Office selected the alternative of not requiring a Federal program to be promulgated within 60 days after a decision under Part 733. Whereas a 60-day requirement for promulgation would compel prompt action and prevent delay, the time period may be too short to both promulgate a Federal program and include adequate time for public participation in keeping with Section 102(i) of the Act and the Administrative Procedures Act, 5 USC Section 553.

3. The question has been raised as to whether the Office should establish specific criteria for withdrawing a State program, including a requirement that a Federal program be established after Federal enforcement of a State program has been in effect for a specified period. One commenter suggested that if a State does not take corrective action within a 60-day period after Federal enforcement, a Federal program should be mandated.

The alternatives would be either to set specific criteria for withdrawing State programs or to provide only a general statement concerning State program withdrawal and promulgation of a Federal program, allowing the procedures set forth in Parts 733 and 736 to function on a case-by-case basis.

The Office decided that Part 736 should not provide specific criteria for withdrawing State programs. Some criteria are set forth in Part 733. In addition, specific considerations should be decided on a case-by-case basis, depending on the nature and experience of substituted Federal enforcement. By utilizing the processes in Parts 733 and 736, the Director will be able to initiate action as necessary to withdraw a State program and to promulgate and implement a Federal program.

4. Other comments concerning promulgation of a Federal program related to whether Part 736 should include a Section requiring Federal monitoring of a State program to determine the need for a Federal program. The alternatives were either to include or not to include such a Section. One commenter suggested that the Secretary continuously evaluate the administration of each State's program. Then, when the Secretary has reason to believe that the State has failed to implement, enforce or maintain its approved State program in whole or in part, the Secretary would hold an informal hearing to determine the credibility of the information and subsequently hold a formal hearing if the information is credible. Depending on the results of the formal hearing, the Secretary would decide whether to promulgate and implement a Federal program.

The Office chose not to include this procedure in Part 736. Since State program monitoring is covered in Section 733.11(a), it was not considered necessary to duplicate this in Part 736.

5. Section 736.11(a)(1)(ii) raises the issue of whether the Office should be required to promulgate and implement a Federal program if a State does not submit a complete State program within a certain number of days from the date a program is determined to be incomplete. Two alternatives were considered. One is to require a Federal program if a State does not resubmit a complete program within a specified number of days. The other alternative is to eliminate incompleteness as a criterion for promulgating and implementing a Federal program.

One commenter suggested that a State should be required to resubmit an acceptable State program within 90 days of a notice of incompleteness pursuant to proposed Section 732.11. Another commenter suggested that at least 60 days should be allowed for the resubmittal of a State program after a notice of incompleteness, since the 30-day time period would be less than the 60 days required by Section 504(a)(2) of the Act. Another commenter suggested not requiring the concept of resubmittal of an acceptable State program within 30 days of a notice of incompleteness.

The Office selected the alternative of eliminating incompleteness as a reason for promulgating and implementing a Federal program. If adopted, this provision would have allowed summary action by the Office without adequate public participation or comment. Furthermore, the concept of incompleteness is not necessary nor particularly desirable for the promulga-

tion or implementation of a Federal program. The final rewording of Part 732 allows a State to add to its State program submission until November 15, 1979, and, if necessary, for 60 days after a program application has been initially disapproved. Automatically starting a Federal program while a State is revising its proposed program would be an unnecessary administrative overlap if the State program is approved within the timeframe allowed by Part 732, even if the time period for resubmitting an incomplete State program was extended by 30 to 60 days. A 60- or 90-day time period for resubmitting an incomplete State program moreover, could pose scheduling difficulties in meeting the required deadline of June 3, 1980, for the promulgation and implementation of a Federal program.

It should be noted that although incompleteness is no longer a criterion for initial disapproval of a State program application, it may be necessary to start the process for promulgating a Federal program as early as January 1980, to assure that a State or Federal program will be in place by June 3, 1980.

§ 736.13 Public comment.

Section 736.13(c)(1)(i) raises the issue of whether the procedures for a public hearing for a Federal program should be adjudicatory, "informal-but-adjudicatory," or legislative.

The commenter who suggested an "informal-but-adjudicatory" procedure felt that the Director's decison for promulgating or revising a Federal program for a State requires an adjudicatory, not a legislative, procedure. The commenter defined the procedure as an adjudicatory procedure with testimony from a broadly affected category of persons, as long as the Director decides that the testimony presented at the hearing is relevant to the issues under consideration.

Adjudicatory and "informal-but-adjudicatory" procedures would be much more cumbersome and not appropriate for the issues relating to Federal program promulgation. Such procedures allow cross-examination, but limit the format as to who may speak and what the speakers may say. The adjudicatory procedure would be impossible in the proposed timeframes and unnecessary due to the broad, generic issues considered in promulgating Federal programs.

The Office chose the legislative hearing alternative. Neither the Constitution nor the Administrative Procedures Act requires more than a "legislative" type hearing. (*Vermont Yankee Nuclear Power* v. *NRDC*, 435 U.S. 519 (1978); *U.S.* v. *Florida East Coast Railway*, 410 U.S. 224 (1973); *U.S.* v. *Allegheny Ludlum-Steel*, 406 U.S. 742 (1972).) Legislative procedures allow for comments from a broadly affected group of persons. All related information may be considered under 5 U.S.C. Section 553, which does not require cross-examination nor the separation of functions among the Department of the Interior staff. Opportunity for written rebuttal is allowed through the submission of comments. This procedure is preferable, as it allows for the type of flexibility necessary for the development of generic rules in the short periods of time that will be available to promulgate a Federal program.

§ 736.21 General requirements of a Federal program and

§ 736.22 Contents of a Federal program.

One issue concerning Sections 736.21 and 736.22 is whether a new Section should be written to expand upon the interplay between a partial Federal program and the remainder of a State program. The alternatives are either to add a Section or to decide upon the specific interplay between the State and Federal program through the promulgation of a particular partial Federal program. One commenter suggested that a new Section is needed to clarify the interplay including permit issuance, enforcement and petitions for designating land as unsuitable for surface mining.

The Office decided that a new Section was not necessary. Partial Federal programs will probably vary from State to State, depending on the State involved and the reasons for the partial withdrawal of the State program. It is not realistic to determine in these rules what interactions will be necessary in a program whose exact contents will be determined later. Examples of a partial Federal program might be (1) a Federal permit system imposed due to the State's inability to administer permits, (2) the Federal regulation of all surface mining operations in one specific geographic area of a State, (3) the Federal designation of lands as unsuitable for mining, or (4) any combination of permanent program elements for a particular State. Allowing the interplay to be decided through the promulgation of the partial Federal program allows for a customized partial program for the individual State.

§ 736.22 Contents of a Federal program.

1. One issue raised in connection with Section 736.22 is whether a Federal program should include the contents required for a State program submission. The alternatives are either to require the same elements or not to require the same elements in a Federal program.

One commenter stated that if the Office proposes the implementation of a Federal program in lieu of a State program, the Federal program should include all the items required of a State when submitting a State program. This suggestion was not accepted by the Office. Requiring the Office to submit the same information required of a State is not a productive alternative, since the Office must be the regulatory authority under the Act if the State cannot be approved or continue as the regulatory authority. Also, much of the State program submission consists of a demonstration that the State has a law, regulations, and systems consistent with the Federal law and these rules.

2. An issue raised by commenters concerning Section 736.22(a)(2) was whether to provide specific guidance concerning Federal statutes which impose duties on the Secretary.

The alternatives are (a) not to cite the Secretary's specific duties imposed by other laws which would need to be followed in a Federal program, (b) to provide a general statement about the laws imposing duties on the Secretary under Federal law, without specifying which laws, and (c) to specify those laws which definitely impose duties on the Secretary, emphasizing those acts, and leave open the idea that there may be other relevant Federal laws.

One commenter felt that the Office was attempting to incorporate the provisions of specific acts into the regulatory program of the Act and, in doing so, would create confusion. Another commenter felt that this Section should be deleted since it included the phrase, "all relevant Federal laws," rather than restricting it to those laws which protect society and the environment. Another commenter felt that a Federal program should notify all Federal personnel and permittees of the requirements for compliance with Federal and State statutes which are designed to preserve and protect natural and cultural resources.

The Office selected the third alternative—to specify those laws which definitely impose duties on the Secretary, thus emphasizing those acts, and leave open the idea that there may be other such Federal laws. The Secretary must undertake those duties when promulgating and implementing a Federal program, whether or not the laws are enumerated in the regulations. Consequently, deleting this Section provides neither guidance nor awareness of requirements, as the selected alternative does.

Another commenter questioned whether the Office has legal authority under the Act to incorporate the Federal statutes listed in this Section. This suggestion was not accepted. The Office believes it has such authority as

explained in the preamble to 30 CFR 770.12(c).

3. Section 736.22(b) raised the issue of whether the Office has the authority to designate lands as unsuitable for all or certain types of surface coal mining in a Federal program. One commenter felt that such a designation by the Federal government may be a usurpation of State land use authority and a possible violation of the 10th Amendment. Under Section 504(a) of the Act, the Office has authority for designating lands as unsuitable for all or certain types of surface coal mining one year after implementation of a Federal program.

4. Section 736.22(c) raises the issue of whether the Office should specify in these rules the procedures for coordination with other Federal agencies on the review an issuance of permits.

The alternatives considered were either (1) to specify the coordination process, including which permits need to be issued first and the portions of the permits which will satisfy the Office requirements or (2) to allow the coordination process to be determined when each Federal program is promulgated.

One commenter felt that the Office might not be trying to avoid duplication and should clarify whether it is requiring copies of applications filed with appropriate agencies. Another commenter felt that the rules lack substantive guidance concerning the EPA and DOI interprogram coordination and that a second permit program could be required of owners or operators in the coal industry.

The Office chose the alternative of allowing the coordination process to be determined when each Federal program is promulgated. The processes involved will need to be resolved on a State-by-State and agency-by-agency basis, and any need for the Office to have copies of applications for permits required by other Federal statutes and standards could be considered in the promulgation of the Federal program.

§ 736.22 Contents of a Federal program and

§ 736.23 Federal program effect on State laws or regulations.

Sections 736.22(a)(3) and 736.23(b) raise the issue of whether a Federal program should be required to adopt the existing State program with revisions necessary only to bring the inadequate provisions of the State program into compliance with provisions of the Act.

One alternative considered is to require the adoption of the existing State program including more stringent provisions, with necessary revisions to bring inadequate portions of the State program into compliance with the Act and regulations. The other alternative is to allow the Director to determine which provisions of the State programs are most suited to a Federal program for the State.

Two commenters felt that the Office's function is to enforce only the minimum requirements of the Act and leave additional and more stringent requirements to the State. Two commenters warned of the precedent in which a Federal officer can, at the officer's discretion, supersede a statute of a State. Another commenter felt that the Director should not be arbitrarily required to impose more stringent performance standards than those of the Act. Another commenter felt that a Section should be added to the rules that would require a Federal program to adopt the existing State program, with the only revisions being those necessary to bring inadequate portions of the State program into compliance with the Act and the regulations.

The Office selected the alternative of requiring the adoption of the existing State program, including the more stringent provisions, with the necessary revisions to bring inadequate portions into compliance. The Office will not preempt and supersede more stringent State laws that are consistent with the Act but will incorporate those portions into the Federal program. Section 504(a) of the Act gives the Office the responsibility to consider the nature of the State's terrain, climate, and biological, chemical, and other relevant physical conditions. Section 505(a) requires that, unless inconsistent with the Act and these regulations, State law shall continue in effect. More stringent State land use and environmental controls are not to be construed as inconsistent (Section 505(b)). In requiring the more stringent standards of a State program, the Office would be promulgating and implementing a program more suited to the State, especially considering the fact that the more stringent standards would have been designed relative to that particular State and would have utilized the State's expertise in determining whether specified, more stringent provisions are needed to protect some aspects of its land, air or water resources.

SUBCHAPTER D—FEDERAL LANDS PROGRAM

PART 740—GENERAL REQUIREMENTS FOR SURFACE COAL MINING AND RECLAMATION ON FEDERAL LANDS

Part 740 sets forth the general definitions and administrative responsibilities for surface coal mining and reclamation operations on Federal lands. The major objective of the Subchapter is to ensure that coal exploration and surface coal mining and reclamation operations, involving Federal lands and Federal coal interests, comply with the spirit and intent of the Act.

Authority for this Part is contained in Sections 102, 201, 512, 523, 701, and 711 of Pub. L. 95-87, 91 Stat. 448, 449, 483, 510, 516, 523, (30 U.S.C. 1202, 1211, 1262, 1273, 1291, 1301): and 41 Stat. 437, as amended (30 U.S.C. 181 et seq.).

§ 740.1 Scope and purpose.

A new paragraph Section 740.1(e) has been added governing the requirments for establishing a schedule for compliance with the permanent regulatory program. Proposed Paragraphs (e) and (f) of this Section have been renumbered (f) and (g), respectively.

§ 740.2 Objectives.

1. As proposed, Section 740.2, "Objectives," states that the objective of Subchapter D is to ensure that coal exploration and surface coal mining and reclamation operations involving Federal coal comply with the requirements of the Act, Subchapter D and all other applicable State and Federal laws.

2. Some commenters have challenged the authority of the Office to include any provisions in its regulations relating to coal exploration. They have objected to inclusion of the term "coal exploration," in Section 740.2, and requested deletion of: (1) references to use of the term "exploration plan" in Section 741.18(a)(2), (2) the provisions delegating responsibility to the Regional Directors for inspection and enforcement of coal exploration operations within the permit area in Section 743.4, and (3) exploration performance standards set forth in Section 744.11.

The basis of the challenge is the contention that the Office has no authority for coal exploration under the Act because Section 512(e) of the Act provides that "coal exploration on Federal lands shall be governed by Section 4 of the Federal Coal Leasing Amendments Act of 1975 (90 Stat. 1085)," and, therefore, Congress intended that coal exploration continue to be governed by the Federal Coal Leasing Amendments Act and would not be affected by the Surface Mining Act.

The Office has carefully considered the argument presented and has concluded that it does have authority to regulate coal exploration operations which are conducted within the permit area and that the commenters have misconstrued the intent of Congress in enacting Section 512(e) of the Act.

Section 512 of the Act provides that State and Federal programs must include a requirement that coal exploration operations be conducted in accordance with exploration regulations issued by the regulatory authority. It requires that such regulations include the requirement that persons intending to conduct coal exploration file an advance notice with the regulatory authority and provisions requiring reclamation in accordance with the performance standards in Section 515 of the Act. Without the addition of Section 512(e), coal exploration operations on Federal lands would be governed by the procedure for authorization to conduct coal exploration in Section 512(a).

The legislative history of H.R. 2, the bill which became Public Law 95-87, shows that Parargaph (e) was added by the House Interior Committee on Interior and Insular Affairs (see House Report 95-218, 94th Cong., 1st Sess. p. 66). Although the Committee Report does not state the reason for the addition, the Office believes that the most logical reason is that the Committee realized that by enactment of Section 4 of the Federal Coal Leasing Amendments Act of August 4, 1967, (90 Stat. 1085; 30 U.S.C. 201(b)) the Congress had already authorized the Secretary of the Interior to require that coal exploration on any land subject to the Mineral Leasing Act shall be conducted pursuant to coal exploration licenses and unless Paragraph (e) was added to Section 512 its procedural provisions would be in conflict with the Mineral Leasing Act coal licensing provisions.

The commenter's argument that coal exploration on Federal lands is controlled by the Mineral Leasing Act and not the Surface Mining Act overlooks the important fact that Section 4 of the Coal Leasing Amendments Act specifically provides that coal exploration licenses may not be issued on any lands on which a coal lease has been issued. Thus, Section 4 of the Coal Leasing Amendments Act does not regulate coal exploration operations which take place within the permit area on leased lands. There are no other Federal laws regulating such operations. Consequently, if the commenter's argument is accepted it follows that Congress intended the environmental protection standards of the Act not to apply to coal exploration operations within a permit area. The Office believes this conclusion is unreasonable in light of the findings and statement of purposes in Sections 101 and 102 of the Act.

Accordingly, the Office has taken the position that coal exploration activities on Federal lands which take place as an incidental part of the conduct of mining operations within the permit area are subject to regulation and control by the Office. The regulations have been carefully drafted to recognize that the Director, U.S. Geological Survey, has sole responsibility for supervising coal exploration activities conducted outside the permit area pursuant to coal exploration licenses.

3. Several commenters indicated that the language "involving Federal coal interest, regardless of surface ownership" in Section 740.2 is without statutory authority and is inconsistent with Section 714 of the Act. They suggest deleting this language.

In reviewing this Section, the Office believes the language is consistent with Section 701 of the Act which defines "Federal lands" as meaning any land, including mineral interests owned by the United States. The Office also believes the language "regardless of surface ownership" is consistent with Section 714 of the Act, because this Section, which provides for consultation with surface owners regarding proposals to lease Federal coal deposits, addresses preleasing requirements. That is, before the Secretary may issue a lease, where private surface is involved, the Secretary must first have the surface owners' written consent. Once such consent is obtained and a Federal coal lease is issued, however, all coal exploration and surface coal mining and reclamation operations are subject to the postlease provisions of Section 740.2, regardless of surface ownership. Nevertheless, the Office decided to modify Section 740.2 by deleting the language "coal interests regardless of surface ownership," replacing it with the language "lands, as defined in Section 700.5. This revision is editorial in nature, but it provides greater continuity with language in the Act and other parts of the regulations.

4. An issue of significant interest in Part 740 involves the definition of Federal lands and the applicability of the regulations in this Subchapter when Federal surface and private minerals are involved. Comments allege that the regulations are insufficiently clear as they relate to the applicability of Parts 740-745 to situations involving Federal surface/private minerals. One commenter indicates that Congress did not intend to include private minerals under Federal surface in the definition "Federal lands."

As previously indicated, Section 701 of the Act specifically defines Federal lands, making no distinction among various combinations of surface-mineral estate ownership; i.e., whenever the Federal Government owns either the surface, the minerals, or both, it is considered Federal lands. The Office could not find any support for a commenter's allegation that Congress did not intend for regulation of mining operations, involving private coal under Federal surface, under the Federal lands program. Therefore, the Office did not accept the alternative to exclude the combination of Federal surface/private minerals from the definition, because it is contrary to the definition of Federal lands as provided by Congress in Section 701 of the Act.

§ 740.4 Responsibilities.

This Section sets forth responsibilities relating to the review, approval or disapproval of cooperative agreements, mining plans, permit applications, bonds and insurance and for establishing responsibility for inspection and enforcement of terms and conditions of coal exploration permits issued pursuant to 43 CFR 3507. . .

1. Section 740.4(d) and (h), have been revised to reflect the separation of mining plan functions from permit application functions. More detailed analysis of this revision is provided under the Preamble discussion of Section 741.12.

A commenter suggested that the provisions of Part 740 be more specifically addressed to cultural resources. Generally, preservation and protection of natural and cultural resources are contained within the provisions of Section 740.2, "Objectives," which requires compliance with the Act, this Chapter, and all other applicable State and Federal laws. Further, Section 740.4(d) provides additional protection of cultural and historic resources by requiring the Director to consult with and obtain the consent of the authorized officer of the Federal surface managing agency, with respect to special requirements relating to the protection of non-mineral resources of the affected area; cultural and historic resources are contained within the context of non-mineral resources. The Office does not believe that it is necessary to single-out cultural resources or any other natural resources in the general provisions of Part 740; however, to strengthen compliance requirements for non-mineral resources, Section 740.4(d) has been modified, requiring the Director to assure operator compliance with special requirements relating to the protection of non-mineral resources in affected areas.

Section 740.4(d) sets forth general responsibilities for review and approval or disapproval of permit applications for surface coal mining and reclamation operations on Federal lands.

A commenter suggested that this provision be modified to clarify the requirement that the Secretary follow permit approval procedures as specified in a State-Federal Cooperative Agreement, where such agreement is in effect. The Office considered the revision but elected not to accept this alternative, because in conducting his

review, the Secretary must also take into account the requirements of the Mineral Leasing Act of 1920, as amended, the National Environmental Policy Act of 1969, and other Federal laws. Procedures for meeting the requirements of these Acts will not be addressed in a State-Federal Cooperative Agreement. Therefore, requirements of these acts with respect to consultations and concurrence of other agencies which have responsibilities for administering these laws must be included in the Office's regulations.

2. Sections 740.4(d) and (f) require the consent or concurrence of the authorized officer of the Surface Managing Agency relating to special requirements and bonding. Comments indicated objection to this requirement, stating it is contrary to Sections 201(c)(6) and (c)(12) of the Act. These Sections, allege commenters, require only consultation and cooperation with other agencies.

The Office considered deleting the consent provision but rejected the alternative. Justification for the rejection is embodied in the Preamble to the proposed rules, which indicates that the consent provision for special requirements relating to the protection of natural resources is required by Section 6 of the Federal Coal Leasing Amendments Act of 1975 (30 U.S.C. 207(7)). This Section states in part that "where the land involved is under the surface jurisdiction of another Federal agency, that other agency must consent to the terms of such approval." The Office and the Secretary cannot neglect compliance with the requirement of Federal law. Further, the Office believes that the allegation that the consent or concurrence provisions of Paragraphs 740.4(d) and (f) are contrary to Paragraphs 201(c)(6) and (c)(12) is unfounded; paragraph 201(c)(6) addresses consultation requirements with other Federal agencies having expertise in the control and reclamation of surface mining, and Paragraph (c)(12) deals with cooperation with other Federal agencies and State regulatory authorities. Neither provision prohibits the Director from complying with other statutory consent or concurrence requirements, nor do they restrict the Director from establishing internal requirements for consent between the Office and other Federal agencies.

§ 740.5 Definitions.

1. One commenter suggested that the definition of "authorized State regulatory authority" in Section 740.5 should be expanded to recognize State separation of authority over exploration and mining activities; in effect, the regulations should permit recognition of more than one State regulatory authority. This concept was not adopted by the Office.

The intent and purpose of requiring a State to designate the State regulatory authority is to have a single contact point at the State level for the Office. This will help avoid any misunderstanding and confusion among the public, the Office and the State in the administration of the Act and regulations promulgated thereunder. This position is also consistent with Section 701(26) of the Act which defines "State regulatory authority" as "the department or agency in each State which has primary responsibility at the State level for administering the Act." This definition implies that only one department or agency is to have lead responsibility, and it is the position of the Office that each State has the responsibility to identify a single authorized regulatory authority within the State government. This does not preclude the regulatory authority from entering into arrangements with other State agencies for the performance of specific tasks. See also the Preamble discussion of the term "state regulatory authority" in Section 700.5.

2. Section 740.5 of the proposed rules contained separate definitions for "lease terms and conditions" and "lease stipulations." Several comments questioned the need for the two terms. As suggested by comments, the text of Parts 740–745 was reviewed to ascertain the need for separate definitions. This review indicated that "lease terms and conditions" and "lease stipulations" were always used in the context of terms, conditions, and stipulations of a lease. After reviewing the regulations, the Office elected to combine the two definitions.

3. Several commenters objected to language in Section 740.5 which requires the State regulatory authority to enforce Federal laws and regulations. States indicate they have no such authority except for that authorized by the Mineral Leasing Act of 1920, as amended and the Act.

The Office considered the alternative of deleting or adding language which would preclude States from enforcing terms, conditions, and stipulations based on Federal law, other than the Mineral Leasing Act and the Act. This alternative, however, was not accepted because adopting it would prohibit the Secretary from fully administering his responsibilities under the Endangered Species Act, the Historic Preservation Act, and other Federal laws. The Director has the option to negotiate, within his authority, the extent to which he will delegate responsibility to a State.

4. Commenters suggested that the reclamation plan provision be excluded from the Section 740.5 definition of "Mining Plan." As written, the commenters suggest that aggregation of different functions under a single term will lead to confusion. For this reason, they suggest restricting the term "Mining Plan" to the commonly understood mining plan reviewed by the U.S. Geological Survey.

As indicated in the Preamble to the proposed rules, the term "Mining Plan," as defined by the Office is intended to reflect the fact that both the Mineral Leasing Act of 1920, as amended, and the Act require a reclamation and operation plan to be filed, and that surface coal mining and reclamation may not be conducted unless a mining plan has been approved by the Secretary (30 U.S.C. 207(c) and 30 U.S.C. 1273). Therefore, the term "Mining Plan," as defined in Section 740.5, must include the requirements of both the Mineral Leasing Act and the Act. Such data and information is essential to the Secretary's review and approval or disapproval of the Mining Plan and the subsequent issuance of a permit by the Director. For these reasons the Office elected not to accept the commenter's suggestion.

5. One commenter indicated that the definition of "operator" was ambiguous, suggesting that it be revised to reflect that an operator could involve an "entity, including any independent contractor." Review of the regulations revealed that the definition of operator in Section 740.5 is unnecessary, since it is a duplication of that contained in Section 701.5. The term has been deleted from Section 740.5. The commenter's suggested revision is also unnecessary since the term "person," as used in the definition of operator in Section 701.5, is defined in Section 700.5, and it includes the alternative language recommended by the commenter.

PART 741—PERMITS

Authority for this Part is contained in Secs. 102, 201, 506, 507, 508, 509, 510, 511, 513, 514, 515, 516, 517, 522, 523, 527, 701 and 711, Pub. L. 95–87, 91 Stat. 448, 449, 473, 474, 478, 479, 480, 483, 484, 485, 486, 495, 496, 507, 510, 513, 516 and 523. (30 U.S.C. 1202, 1211, 1256, 1257, 1258, 1259, 1260, 1261, 1263, 1264, 1265, 1266, 1267, 1272, 1273, 1277, 1291 and 1301); and 41 Stat. 437, as amended (30 U.S.C. 181 et. seq.).

Part 741 provides for application, revision, renewal and cancellation of permits to conduct surface coal mining operations on Federal lands. Its purpose is also to ensure that surface coal mining and reclamation operations on Federal lands are conducted only after the Department has determined that reclamation as required by the Act is feasible.

Some commenters objected to inclusion of the permit application requirements arguing that much of the information required to be contained in permit applications for mines involving federally-leased coal was duplicative of requirements for obtaining Federal leases. The Office made no changes in the regulations in that regard, for several reasons. First, the Act establishes an independent regulatory scheme for coal mining from that under the Federal Coal Leasing Amendments Act. Under the Act, permit applications must be made available to the public at public offices near the locality of mining. Information merely in Department of Interior files on a Federal coal lease would not meet the requirements of the Act. Second, where a cooperative agreement exists under 30 CFR Part 745, the applicant must make application information available in an organized fashion to the State regulatory authority for scrutiny in the State permitting process. Third, Federal lease decisions do not include much of the information needed for the Act permits. Finally, lease decisions are made a substantial period of time before the permit application process. Thus, lease information may not be sufficiently current for the applicant to bear its burden of proving entitlement to a permit.

§ 741.1 Scope.

1. Section 741.1 has been restructured. Its provisions are now limited to the requirements for permits to conduct surface coal mining and reclamation operations on Federal lands. A new Section 741.2, "Objectives," has been added as a result of restructuring Section 741.1.

§ 741.4 Responsibilities.

1. Section 741.4 sets forth the general obligations under which surface coal mining and reclamation operations may be conducted. Commenters suggested adding provisions in this Part requiring the regulatory authority to notify an applicant within 90 days if a permit application to conduct surface coal mining and reclamation operations is complete. Commenters indicate that it is important to know if an application is deemed complete if an applicant is to continue operating under an approved mining plan beyond the time existing operations are to have approved permits under the permanent regulatory program. They further contend that when faced with the possibility of having to develop information for permit applications, time is often of essence to the applicant.

Alternatives to the notification issue, analyzed by the Office, included the 90-day notification period suggested and the alternative to treat the notification process as a procedural item within Office manuals and directives.

The first alternative, although it would provide a fixed time limit, is not reasonable because it would create the possibility that permit applications could be considered approved by default, if for some reason the Office could not respond within the 90-day time limit. For example, delays caused by excessive workload, staffing problems, or preparation or publishing of an environmental impact statement could exceed the 90-day period, thereby causing approval by default. This would place the Secretary in a tenuous situation of possible violation of his responsibility to approve mining plans under the Mineral Leasing Act of 1920, as amended. This alternative was, therefore, determined unacceptable.

In resolving the "notification of completeness" issue, the Office determined that the provisions of Sections 741.4(a) and 740.4(a) adequately cover the Office's and the Secretary's responsibilities for reviewing and approving or disapproving permit applications and mining plans. In the Office's judgement, any additional specific requirements relating to the "notification of completeness" issue are procedural and are best handled in the manner of developing Office manuals and directives.

2. Several commenters suggested that States be given sole responsibility for review and approval of permits. They alleged that Section 741.4(b), which requires joint review of the authorized State regulatory authority and the Director perpetuates "duality" of administration when State-Federal Cooperative Agreements are in effect.

The Office explored three alternatives to the proposed rules, ranging from deletion of the Section 741.4(b) entirely to giving States full authority to approve permits. Neither of these alternatives was determined to be acceptable. Deleting Section 741.4(b) entirely would leave the States and the public uninformed on important procedural items. Giving the States sole authority to approve permits was also unacceptable as it is not a legal alternative because of the interrelationship between permits and mining plans. Section 523(c) of the Act specifically prohibits the Secretary from delegating his responsibility to approve mining plans to the States; permits may not be approved until the Secretary has approved a mining plan. Thus, there is no legal basis for delegating sole responsibility to the State to approve mining plans.

3. Section 741.4(c) sets forth the collective responsibilities of the mining supervisors, the authorized officer of the surface managing agencies, and the Regional Director as they relate to formulation of special requirements to be included in mining and reclamation plans. One commenter suggested that the language of this Section be revised to indicate that the mining supervisor, in consultation with the authorized officer and the Regional Director, should formulate special requirements. Such revision, however, infers that the mining supervisor has the lead responsibility in developing special requirements across a broad area of mining and reclamation operations. This is contrary to the intent of this Section and to the legal authorities, e.g., the Mineral Leasing Act of 1920, as amended and the Act, governing the functional responsibilities for coal leasing, mining, and reclamation operations.

4. Another commenter suggested that Section 741.4(c) should be rewritten to specifically describe the U.S. Geological Survey (USGS) responsibility for review and recommending approval of a mining plan under 30 CFR 211. This alternative was not accepted by the Office. It is contrary to the intent of Section 741.4(c), which is merely specifying that certain authorities, collectively, are responsible for formulating special requirements for a broad area of mining and reclamation operations. Further, the Office believes that USGS responsibilities, as they relate to mining and operations plans, are adequately covered in Section 740.4(h). This Section specifically points out that review of the mining and operations plan section of the mining plan is the responsibility of the USGS.

5. A new paragraph (d) has been added to Section 741.4 to reflect the separation of permit approval functions from the mining plan function. Further analyses of this regulatory change may be found in the Preamble discussion for Section 741.12.

§ 741.11 General Obligations.

1. Section 741.11, "General Obligations," has been revised and renumbered. Paragraphs (a), (a)(i), (a)(ii), (b) and (c) have been renumbered (c)(1), (c)(2), (b), (d) and (e), respectively. New Paragraphs (a), (1) and (2) have been added.

2. Section 741.11(a) and (a)(i) of the proposed rules (741.11(c)(1) and 741.11(c)(2) as renumbered) describe permit requirements for operators who are conducting or who intend to conduct surface coal mining operations on Federal lands. Numerous commenters objected to the requirement that an application for a permit be filed within two months after the effective date of the final regulations, specifying that this is an unreasonably short time-period. Commenters generally argued that a two month time-

frame was totally inadequate for gathering of certain environmental data, because certain permit requirements in Part 779, 780, 782, and 783 would require up to one year or more for data to be collected.

In resolving the issue of when a Federal lands program should become effective, the Office examined three alternatives. One would require permit filing consistent with the requirements of a State or Federal program once such a program is implemented. The Office rejected this alternative since Section 523(a) explicitly directs the Secretary to promulgate and implement a Federal lands program within one year of enactment of the Act. Delaying the implementation of Federal lands program to coincide with the provisions of Sections 503(a) and 504(a) of the Act is legally unacceptable, as the maximum time limit for implementing the Federal lands program would extend far beyond the 12-month time period intended by Congress.

A second alternative analyzed by the Office would require making the permanent program performance standards of Subchapter K applicable upon the effective date of the regulations, followed by a complete permit application filing within one year of the effective date. This alternative would follow the precedent of the initial program regulations which made initial performance standards applicable to all lands on and after the effective date of the regulations on lands from which the coal had not been removed (30 CFR 710.11(d)). Under the considered alternative, this concept would be extended by requiring compliance with the final performance standards upon effective date of the regulations. At the same time, operators would be given up to 12-months from the effective date of the regulations to collect certain field data required under Parts 779, 780, 782 and 783, which is necessary for filing a complete permit application pursuant to Section 741.13. This alternative, the Office believes, would fulfill the mandate of Congress to promulgate and implement a Federal lands program within the time period specified in Section 523(a) of the Act. It also would provide sufficient leadtime for the operator to gather necessary data for the permit application and subsequent review, approval or disapproval by the Secretary.

Although the second alternative would adequately cover all areas of concern expressed by the commenters, the Office rejected this alternative because it is not sufficiently responsive to the various existing or potential mining operations and situations. Instead, the Office adopted a third alternative which, by adding a new section, requires each operator having an approved mining plan to comply with the permanent performance standards of Subchapter K six months after the effective date of the regulations. However, where performance standards require modification of an approved mining plan, as determined by the regulatory authority, the time for compliance may be extended up to 12 months from the effective date of the final rules. This alternative, the Office believes, provides the flexibility to enforce compliance of specific performance standards on a case-by-case basis while maintaining the rapid implementation schedule intended by Congress in Section 523(a) of the Act. A full permit application will be required two months after a State or Federal program is implemented for the State in which the operation is located. This will provide adequate time for collection and analysis of all required data. It will also assure that the operator is not required to apply for a Federal permit on one schedule, followed within a few months by an application for a permit under a State-Federal cooperative agreement which requires the operator to obtain a State permit.

For a discussion of the regulation of existing structures on Federal lands, see the Preamble to 30 CFR 701.11.

3. Section 741.11(a)(ii) of the proposed rules (Section 741.11(b) as renumbered) specified that wherever surface coal mining operations involve both Federal and private lands, the operations on private lands must be conducted in accordance with the requirements of Part 741. The intent of this Paragraph is to afford protection of Federal lands from surface coal mining activities on private lands, where such operations involve both Federal and private ownerships. These provisions were challenged by numerous commenters who contended that the operating requirements imposed by the Office exceeded the authority granted under the Act.

The Office analyzed several alternatives to the proposed rules in Section 741.11(a)(ii). Deleting the requirement entirely was determined unacceptable since publicly owned lands would not be adequately protected. Therefore, this alternative would be in violation of Section 102 (a) through (e) of the Act. A second alternative would be to add a proviso which limited or constrained the applicability of this Section to only those situations where the private lands comprised a relatively small part of the mine plan and when the State concurred with such action. This alternative was also rejected by the Office since it fails to provide protection for operations involving Federal lands where they comprise less than major portion of the mine plan.

A third alternative considered would require a single permit for operations involving both Federal and non-Federal lands. This concept allows an operation to be reviewed as a complete unit. The single permit option, however, would require a Federal program or a State program and a State-Federal Cooperative Agreement under an approved State program to be operational. Since it was concluded that the Secretary has no authority to impose Federal lands program requirements on non-Federal lands this alternative was not acceptable.

The Office explored a fourth alternative to the proposed provisions of Section 741.11(a)(ii). This alternative would authorize surface coal mining operations on Federal lands, provided contiguous operations on intermingled private lands did not adversely impact the adjacent Federal lands. This alternative provides the necessary protection for Federal lands while maintaining the right of the State to administer surface coal mining and reclamation operations on private and State lands. This alternative was rejected, however, since protection of Federal lands would be totally dependent upon State actions on private lands and the degree of cooperation between the Office and the State, particularly in States that do not have State-Federal Cooperative Agreements.

A fifth alternative analyzed by the Office would require, as a condition of departmental approval to begin or continue operations on Federal lands, operations on intermingled non-Federal lands to be conducted in a manner which will not preclude compliance with the performance standards in Subchapter K on Federal lands. While affording the desired protection for Federal lands, this alternative permits States to enforce fully environmental protection standards required by the Act on operations conducted on private lands. This alternative was determined the most acceptable of those analyzed and was, therefore, adopted by the Office.

4. Section 741.11(b)(2) of the proposed rules (Section 741.11(d)(2) as renumbered) specified that an operator could conduct surface coal mining and reclamation activities beyond the date for filing a permit application, as required, in Section 741.11(a), provided the Office has not yet rendered an initial decision with respect to an application. Several commenters allege that the term "initial decision" is vague and that an operator who has submitted a complete permit application should be permitted to continue operations until the Secretary has rendered a final or appealable decision, if necessary, on a permit application.

The Office has reviewed the provisions of Section 741.11(b)(2). To clarify the meaning of this term, this Section has, therefore, been revised to

specify that operations may continue to be conducted until the Director (in lieu of the Secretary) has rendered a final decision with respect to the permit application pursuant to the procedures in Sections 741.21(a) (4) or (5). This revision reflects the changes in approval of mining plan and permit applications in Section 741.12. It also is closely related to the provisions of Section 741.21(5), which provide for applicant appeals of final decisions made by the Director.

§ 741.13 Relation of Permit to Mining Plan.

1. Section 741.12(a) of the proposed rules (Section 741.13(a) as renumbered) provides guidance for submitting permit applications, including permit fees, copies required, and application contents. Several commenters objected to the proposed provisions of Section 741.12(a) which stated that, "the amount of the fee shall be determined by a fee table published by the Director." They assert that the regulatory authority should have much greater flexibility in establishing filing fees, citing as authority Section 507(a) of the Act which states, ". . . the permit fee may be less than but shall not exceed the actual or anticipated cost of reviewing, administering, and enforcing such permit issued pursuant to a State or Federal program." Commenters allegations are further supported by the Senate Committee Report (95-128), page 75, which addresses this issue by stating: "The Committee, however, intends to allow the regulatory authority complete latitude to set the fee at a nominal rate if it so desires. . . ."

The Office concurs that Congress intended to provide the regulatory authority with flexibility in setting permit application fees. Section 741.13(a) has, therefore, been revised to provide that the permit fee shall not exceed the actual or anticipated administrative costs of reviewing, administering and enforcing the application. Further, the amount of the fee may be determined by either using a fee schedule published by the Director, or as determined pursuant to a State-Federal Cooperative Agreement. In adopting this alternative, the Office believes that the regulations are fully responsive to the intent of Congress to provide flexibility in establishing filing fees.

2. Section 741.12(c) of the proposed rules (Section 741.13(c) as renumbered) outlines the content requirements of applications including: the reclamation and operation plans required by 30 CFR 780 and 30 CFR 784; the legal, financial, compliance and related information required by 30 CFR 778 and 30 CFR 782, as appropriate; and the environmental resource data required by 30 CFR 779 or 30 CFR 783, as appropriate.

One commenter suggested that Section 741.12(c) require only a permit revision rather than an entire permit application for the initial permit under the Federal lands program. This process, as suggested, would include filing copies of all existing State permits and revisions and requiring only such additional material as required at the time of filing under Office regulations.

In reviewing Sections 506, 507, and 508 of the Act, the Office believes that Congress clearly intended for permit applications pursuant to an approved State program or a Federal program be complete in all respects. The requirement that all operators file a new and complete permit application is found in Section 506(a) which states, "No person shall engage in or carry out on lands within a State any surface coal mining operations unless such person has first obtained a permit issued by such State pursuant to an approved State program or by the Secretary pursuant to a Federal program . . ." with exception for continued operations pending the initial administrative decision. The Office believes that Section 523(a) of the Act, which requires that the Federal lands program incorporates "all of the requirements of this Act" requires compliance with Section 506 and that a new permit application must be filed. Accordingly, the commenter's recommendation was not accepted.

3. Section 741.12(c)(1) of the proposed rules specifically stated that a permit application shall be submitted as a part of a mining plan. One commenter alleged that Section 741.12(c)(1) was confusing, since it first specified that a permit application is part of a mining plan, then subsequently indicated in Section 741.12(c)(3) that the mining plan is part of a permit application. The commenter recommended that the permit application functions be separated from the mining plan functions.

The Office has reviewed the permit application requirements of the proposed Section 741.12 rules and agrees with the commenter that this Section was confusing. Consequently, the Office has elected to adopt the commenter's recommendation to separate permit application functions from the operations and reclamation plan function required by the Mineral Leasing Act of 1920, as amended. This revision was accomplished by adding a new Section 741.12 which outlines the relationship between permits and mining plans, as defined by the Office. Section 741.12(c)(1) of the proposed rules (Section 741.13(c)(1) as renumbered) to limit the contents of permit applications to that authorized by the Act. This specifically excludes proposed rules, Section 741.12(c)(1)(iv), which required submission of the operation and reclamation plan (mining and operations plan) required by 30 CFR 211.

To avoid any misunderstanding, the Office has elected to provide the following discussion and analysis of the interdependent relationship of the mining permit and reclamation plan requirements of the Act and the operations and reclamation plan provisions of the Mineral Leasing Act of 1920, as amended.

Section 6 of the Mineral Leasing Act of 1920, as amended requires that an operations and reclamation plan, involving Federal coal leaseholds must be submitted for the Secretary's approval. This plan is prepared in detail and shows how the lessee proposes to meet development, production, resource recovery and protection, diligence, and maximum economic recovery requirements of the Mineral Leasing Act as amended. The Surface Mining Control and Reclamation Act of 1977 does not supersede the Secretary's responsibility to approve or disapprove operations and reclamation plans. Its only impact is to prohibit the Secretary from delegating such responsibility to States. Therefore, the Office must recognize and incorporate the mandates of the Mineral Leasing Act of 1920, as amended, into the Federal lands program required by the Act. A mining permit cannot be issued without an approved operation and reclamation plan.

As previously stated, Section 523(a) of the Act specifies that "the Federal lands program shall, at a minimum, incorporate all of the requirements of this Act. . . ." Therefore, the Federal lands program must include the permit application requirements of Sections 506 and 507 of the Act and the reclamation plan requirements of Section 508 of the Act. Thus it becomes apparent that surface coal mining and reclamation operations on Federal lands are governed by the interrelated, dependent requirements of two separate laws. That is, a surface coal mining and reclamation permit required by Section 506 of the Act cannot be issued unless the Secretary has approved an operations and reclamation (mining and operations) plan required by the Mineral Leasing Act of 1920, as amended. Conversely, an approved operations and reclamation plan does not constitute authority to commence surface mining and reclamation operations. As an administrative procedure, the Office has elected to combine the requirements of both Acts, as described, into a "mining plan," as defined in 30 CFR 740.5.

After further consideration, the Office has elected to adopt administrative procedures for the review and approval of permit applications and

mining plans which differ somewhat from the procedures in the proposed rules. Under the revised procedures the permit application and the mining plan will be filed with the appropriate Regional Director, who will review these documents to determine their completeness and compliance with applicable laws and regulations, and conduct the consultations, conferences and public hearings required by Subchapter D of the regulations. After the Regional Director has completed his review and the public hearing is held, the permit application and the mining plan will be forwarded to the Director. The Director will review the permit application and the Secretary will review the mining plan. When the Director determines the permit application is in order he will inform the Secretary that he is prepared to approve a permit. The Director, U.S. Geological Survey, will review the mining and operations plan required by the Mineral Leasing Act of 1920, as amended. The Director will issue a permit upon notification by the Secretary that he has approved the mining plan.

4. The purpose of Section 741.12(c)(2) of the proposed rules (Section 741.13(c)(2) as renumbered) is to notify applicants, seeking authorization to conduct special categories of mining, of additional information requirements applicable to special categories of mining. Commenters found that the language of this Section was unclear and could be interpreted as a provision to submit information required by 30 CFR 785 for all special categories of mining listed, regardless of applicability.

In reviewing the provisions of Section 741.12(c)(2), the Office concurs that the proposed language is subject to misinterpretation, and has elected to revise this provision to specify that the information required pertains only to the special category or categories of mining proposed by the applicant.

§ 741.13 Permit applications.

1. Section 741.13(a)(1)(ii) (Section 741.12(c)(1)(iii) as proposed) requires a reclamation and operation plan meeting the requirements of 30 CFR 780 or 30 CFR 784, as appropriate. Additionally, these provisions also require information relating to the method of mining, the mining sequence, and the proposed production rate for the life of the mine. The intent and purpose of the latter requirement is to provide the Office and the Secretary with data which are essential in identifying and determining the magnitude of environmental impacts and whether to approve or disapprove a permit application or a mining plan.

2. One commenter indicated that "production rate for the life of the mine," as used in Section 741.12(c)(1)(iii) of the proposed rules (Section 741.13(c)(1)(iii) as renumbered) is difficult to predict, due to contractual changes, manpower, equipment, operating costs, etc. The commenter suggested that only total proposed production be required.

The Office did not accept the commenter's alternative language because data in Section 741.13(c)(1)(iii) as renumbered, relates to method of mining, the mining sequence, and the proposed production rate for the life of the mine as required by 30 CFR 211. However, since these requirements will be met under the provisions of 30 CFR 211, the language relating to the method of mining, the mining sequence, and the proposed production rate for the life of the mine has been deleted from Section 741.13(c)(1)(iii) to avoid redundancy.

§ 741.14 Requirements for special operations.

The title of Section 741.13 (Section 741.14 as renumbered) was changed to read *Requirements for special operations* in response to commenters' objections to an additional permit for special operations. The change reflects the Office's intent to allow special operations to be included in permit applications. Also, permit application Paragraphs (i), (j) and (k) have been added to include auger mining, coal processing plants and support facilities and in situ coal processing activities under this Section.

§ 741.17 Criteria for Permit Approval or Disapproval.

1. Section 741.16 has been revised. Section 741.16(a) is renumbered Section 741.17; a new Paragraph (a) has been added, Section 741.16(a) has been deleted and its provisions included in new Section 741.22. Proposed Paragraphs (b) and (c) of Section 741.16 have been combined and restructured, and now incorporate the proposed requirements by reference under new Paragraph (b). Section 741.16(e) and 741.16(f) have been renumbered Section 741.17(c) and Section 741.17(d), respectively.

2. Section 741.16(e) of the proposed rules (Section 741.17(c) as renumbered) specified that no permit involving operations on Federal lands in a State having an approved State-Federal Cooperative Agreement shall be approved until both the Director and the authorized State regulatory authority have concurred in issuance of the permit. The purpose of this requirement is to provide full protection for Federal lands.

Several commenters indicated that the language of proposed Section 741.16(e) should be revised to allow State approval of permits on lands within the permit area which are private or State lands. Commenters contend that the Secretary has no authority to control development on private and State lands if a State program has been approved. The commenter suggests that without the recommended revision, the proposed rules language may be inconsistent with some State-Federal Cooperative Agreements.

The Office does not believe that the requirements of Section 741.16(e) prohibit a State from taking action on non-Federal lands, except for the provisions of Section 741.11(b) which requires Federal permittees, desiring to conduct operations on intermingled Federal and non-Federal lands, to conduct such operations in a manner which does not preclude compliance with the performance standards of Subchapter K on Federal lands. Further, the Office believes the language of Section 741.16(e) is consistent with existing practice. The Office, therefore, did not accept the commenters' alternative language.

3. Two commenters objected to the proposed Section 741.16(f) which requires that a permit application not be approved unless it is demonstrated that the applicant has complied with each requirement of all other applicable Federal laws. The commenters contend that there is no statutory justification for imposing this requirement on the applicant and the procedure would be an administrative nightmare. They recommend deleting the paragraph in its entirety.

The intent of Section 741.16(f) was not to impose unreasonable, burdensome requirements on the applicant. Rather, this Section is intended to insure that the applicant show that he has complied with the requirements of applicable Federal laws. Support for the Office's position is contained in Section 510(b) of the Act which require that a permit application be complete and meet all requirements of the Act and the State or Federal program. Further, the Secretary has no legal authority to exempt an operator from compliance with other existing laws and regulations. Section 702(a) of the Act specifically states that it does not supersede, amend, modify, or repeal the requirements of other Federal laws. The commenter's suggested alternative to delete Section 741.16(f) was, therefore, not accepted.

§ 741.19 Availability of information.

1. Section 741.18(a)(1) of the proposed rules (Section 741.19(a)(1) as renumbered) is intended to delineate between information which will be open to public inspection and copying and that which will be kept confidential and not made a matter of public record. One commenter suggested that data relating to stripping ratios be spe-

cifically identified as not subject to public inspection and copying. The commenter alleges that such data reveals the ultimate economics of the operation and should, therefore, be kept confidential.

The Office considered the alternative to exempt data relating to stripping ratio from public inspection and copying. The Office believes, however, that the alternative is without statutory authority and would be inconsistent with the provisions of Section 508(a)(12) of the act which explicitly identifies the information to be kept confidential. Therefore, the alternative was not accepted.

2. Section 741.18(a)(2) of the proposed rules (renumbered Section 741.19(a)(2) provide that all exploration or mining and reclamation portions of the application, required under Section 508 of the Act and which are not required to be disclosed by the Freedom of Information Act and 43 CFR 2, shall be handled as confidential material. The intent of this Paragraph is to protect only proprietary data from disclosure. However, as proposed, this provision did not clearly state the intent. Accordingly, the Paragraph was revised to specify that only information which is exempt from disclosure under the Freedom of Information Act shall be held confidential.

Commenters suggested that "exploration" be excluded from the provisions of Section 741.19(a)(2), indicating that Part 741 does not apply to exploration. For those reasons discussed in Section 740.2 OSM believes it does have authority to regulate exploration within the permit area, but specific reference to "exploration" has been deleted from Section 741.19(a)(2) inasmuch as information relating to exploration is required by Section 741.13(c)(1)(iii) to be included in the mining and reclamation plan.

3. Section 741.18(b) of the proposed rules (renumbered Section 741.19(b)) establishes that information in a permit, required to be kept confidential under other provisions of this Section, must be clearly marked as confidential information by the applicant. Data so marked shall be kept separate from other portions of the application. The purpose of this Section is to protect applicant rights as they relate to confidentiality.

One commenter suggested that this Section be revised by adding language which provides that failure to mark appropriate data as "Confidential Information" by the applicant would be construed as a waiver of confidentiality. Adoption of the commenter's recommended language would preclude an agency from having to determine whether or not a claim of confidentiality is asserted for unmarked information on the permit application. The Office elected to adopt the suggestion since it avoids imposition of an administrative burden on an agency.

Also, commenters suggested revising the language in this Section to clearly indicate that the Office or the regulatory authority is responsible for physically separating pages marked confidential from other portions of the application. This, the commenters allege, will help insure that confidential material will not be inadvertantly released to the public. The Office concurs that information marked "Confidential" should be physically separated from other portions of the application. It does not agree that the Office should be responsible for separating confidential and non-confidential materials. Section 741.18(b) of the proposed rules (741.19(b) as renumbered) has, therefore, been revised to specify that the applicant is responsible for marking and separating such data from other portions of the application. The Office is responsible for ensuring that "Confidential" material is kept separate and not made available to the public.

§ 741.20 Permit review processing for operations on National Forest System lands.

1. Proposed Section 741.19 (renumbered Section 741.20 and retitled for the final rules) sets forth permit application or permit revision consent requirements for operations on Federal lands within the boundaries of National Forest System Lands. The intent is to disclose fully to the Secretary of Agriculture operations affecting lands within the National Forest System and to receive his concurrence for those operations.

2. One commenter objected to the consent provisions of Section 741.19 as proposed and suggested that the Secretary of Agriculture should be permitted only to comment on a permit application or permit revision. The commenter cites Sections 201(c)(6) and 201(c)(12) of the Act as authority for only requiring consultation and cooperation with other agencies.

The Office elected not to accept the alternative language suggested. Sections 201(c)(12) and 201(c)(6) of the Act do not preclude the Secretary from promulgating regulations requiring other Federal agency consent to issue permits for surface coal mining and reclamation operations where those operations have a direct impact on lands under the jurisdiction of that agency. Further, the Surface Mining Control and Reclamation Act of 1977 does not supersede, amend, modify, or repeal provisions of other Federal laws. Section 207 of the Mineral Leasing Act, as amended, (30 U.S.C. 207(c)) specifically requires ". . . that where the surface of Federal lands to be leased is under the jurisdiction of an agency other than the Department of the Interior that other agency must consent to the approval of the mining plan."

Finally Section 522(e) of the Surface Mining Control and Reclamation Act prohibits surface coal mining operations on any Federal lands within the boundaries of any national, forest unless the Secretary of the Interior finds that there are no significant recreational, timber, economic, or other values which may be incompatible with and surface mining operations and surface operations are incident to an underground coal mine, or where the Secretary of Agriculture determines, with respect to lands which do not have significant forest cover with those national forests west of the 100th meridian, that surface mining is in compliance with the Multiple-Use Sustained-Yield Act of 1960 (16 U.S.C. 528 note), the Federal Coal Leasing Amendments Act of 1975 (30 U.S.C. 181 note), the National Forest Management Act of 1976 (16 U.S.C. 1600 note), and the Surface Mining Act. Obviously, the provision that surface coal mining operations can be permitted on Federal lands in national forests west of the 100th meridian only where the Secretary of Agriculture makes the required determination is a requirement that he must consent to the proposed mining operations.

§ 741.21 Review of permit applications.

1. Proposed Section 741.20(a) (renumbered Section 741.21(a)) provides that the Director shall be responsible for reviewing a complete permit application and all other related data. Several commenters indicate that the Director should make such a review within a specified time period. Commenters argue that this would facilitate the review process and would assure timely approval of a permit application. Time periods of 30 days and 60 days were recommended.

In order to comply with the requirements of Section 514(a) of the act, the Office has revised Section 741.21(a)(4)(1) to provide that if an informal conference is held under Section 741.18 the Director shall give his written findings on the permit application to the permit applicant and parties to the conference within 60 days from the date of the conference. Where no informal conference is held Section 514(b) of the act provides that the regulatory authority notify the applicant within "a reasonable time" of approval or disapproval of a permit application. Given the complexity of the procedures for review of permit applications relating to Federal lands the Office has elected not to provide a fixed time limit at this time.

Section 741.20(a) (renumbered Section 741.21(a)) has been revised to reflect administrative procedures and responsibilities adopted by the Office for the review of permit applications. For example, responsibility for the initial review of applications, comments on proposed applications and the review of records of informal conferences is assigned to the Regional Director, who will recommend approval or disapproval of applications to the Director. The Office believes this procedure will speed up the review process by assuring to the extent possible that permit applications are complete before they are forwarded for final review by the Director. In addition, this Section is revised to reflect the secretarial decision that the Director is responsible for approval or disapproval of permit applications. Accordingly, the provision in the proposed rules that the Director make a recommendation to the Secretary on approval or disapproval has been deleted.

Paragraph (a)(4) has been revised by adding a provision for notice to be given by the Director of his decision to approve or disapprove a permit application to the applicant, interested parties and the State regulatory authority if there is a State-Federal cooperative agreement. The authority for these requirements is Section 514(a) of the Act. (A discussion of the basis and purpose of these requirements may be found in the Preamble discussion of 30 CFR 785.)

2. As proposed, Part 741 contained no provisions for appeals from decision to approve or disapprove permit applications. The reason for this omission was that the Department had not decided upon procedures for appeals and administrative review. Section 514(c) of the act requires that within 30 days after an applicant is notified of the final decision of the regulatory authority on a permit application the applicant or any person with an interest which is or may be adversely affected may request a hearing on the reasons for the decision. The Act further provides that if the Secretary is the regulatory authority the hearing shall be of record and governed by 5 U.S.C. Section 554. To meet these requirements, Paragraph 741.21(a)(5) has been added to provide that an appeal from the final decision of the Director on a permit application can be taken to the Department's Office of Hearings and Appeals as provided in 30 CFR 787.11. Hearings by the Office of Hearings and Appeals are governed by the rules in 43 CFR 4.

3. Section 741.20(b), of the proposed regulations which provided that the Director require the applicant to file a performance bond before issuance of a permit, has been deleted for the reason that this requirement is now covered by Section 741.22.

4. Proposed Sections 741.20 (c) and (d) (741.21(b) and 741.21(c) as renumbered) have been revised to conform to the comparable provision in 30 CFR Section 786.17 (c) and (d).

5. Proposed Section 741.22 (renumbered Section 741.24) has been revised to reflect the administrative procedural change to transfer responsibility for approval of permits or permit revision to the Director.

Accordingly, Paragraph (b) provides that the Director, upon recommendation of the Regional Director, may require revision or modification or permits, instead of the Secretary. A new Paragraph (d) is added providing that revisions to permits which require a modification of an approved mining plan may not be approved until the Secretary approves the modification of the mining plan.

§ 741.24 Review of approved permits and permit revisions.

1. The purpose of Section 741.23 (renumbered Section 741.24) is to establish procedures for the assignment, or sale of rights granted under a permit issued pursuant to Subchapter D. Paragraph (c) of this Section specifies that the Bureau of Land Management and the Geological Survey must give consent prior to the approval or disapproval of an application for transfer, assignment or sale of rights.

2. Comments received stated that it is unreasonable for an operator to have to gain the approval of several agencies for transfer, assignment, or sale of rights granted under a permit, further suggesting that Section 201(c)(12) of the Act charges OSM with the responsibility to avoid duplication with other regulatory agencies when possible. The commenter, therefore, suggests that in transfer, assignment or sale of rights actions, the Regional Director need only obtain the recommendation of the Bureau of Land Management and the Geological Survey in lieu of concurrence, as stated in the regulations.

The reason for the requirement to obtain the consent of the Bureau of Land Management and the Geological Survey is that these agencies have administrative responsibility for assuring compliance with requirements of the Mineral Leasing Act, as amended. For example, the Bureau is responsible for approval of transfers, assignments or subleasing of leasehold rights under regulations in 30 CFR 3506. These regulations include a determination that the transferee is qualified to hold a lease or that he has a sufficient bond. The Geological Survey is reasonable for determining that rents and royalties due have been paid. The Office had no legal authority to make these determinations, nor is it authorized to approve a transfer unless the Bureau and the Geological Survey concur in the transfer. Accordingly, the recommended revision was not accepted.

PART 742—BONDS AND LIABILITY INSURANCE ON FEDERAL LANDS

1. This Part sets forth bonding and liability insurance provisions for surface coal mining operations on Federal lands. Its purpose, is to set forth the procedures and requirements and to ensure compliance with the terms, conditions, and stipulations of a coal lease, license, or permit issued pursuant to the Mineral Leasing Act of 1920, as amended, and the Act, and to inform the public and permit applicants on procedure for setting bond amounts.

Authority for this Part is contained in Secs. 102. 201, 507, 509, 519, 523, and 715, Pub. L. 95–87, 91 Stat. 448, 449, 474, 479, 501, 510, and 525 (30 U.S.C. 1207, 1211, 1257, 1259, 1269, 1273, 1305; and 41 Stat. 437, as amended (30 U.S.C. 181 et seq.).

§ 742.4 Responsibilities.

Section 742.4 sets forth the responsibilities of the Director with respect to the form, determination of amount, the release and the forfeiture of performance. No comments were received regarding this section and it is adopted as proposed.

§ 742.5 Definitions.

1. Section 742.5 contains definitions of the terms "Federal lease bond" and "Federal lessee protection bond." No comments were received regarding this section. However, in order to avoid any confusion it should be understood that the word "permittee" as used in the definition of Federal lessee protection bond and in 30 CFR 742.13 means a person to whom a special use permit is issued by the Bureau of Land Management or other surface managing agencies and is not intended to apply to persons issued a permit to conduct surface coal mining and reclamation operations on Federal lands.

2. One commenter suggested adding a new Section 742.6 describing bonding requirements on Federal lands, where a State-Federal cooperative agreement was in effect. The provisions of the new Section, as suggested, would include guidance for establishing the amount of the bond and the payee, release procedures and liability, and forfeiture responsibility and authority. The commenter contends that the new Section will correspond to bond provisions contained in existing State cooperative agreements.

Except for the suggested language which would make a bond payable to both the United States and the State,

the Office believes that the commenters alternative language would duplicate provisions contained in Part 745. Section 745.12(a) requires States with cooperative agreements to enforce State program requirements of which the bonding provisions in Parts 800–808 are a part. These bonding requirements are explicit and detailed as they relate to establishing bond amount, release proceedings, forfeiture responsibility and authority. This part of the commenter's alternative was, therefore, not accepted. The Office did, however, elect to add a new Paragraph (b) to Section 741.12, which expands the bond payee to include the State regulatory authority where surface coal mining operations on Federal lands are being administered under a cooperative agreement.

§ 742.13 Federal Lessee Protection Bonds.

1. Section 742.13 sets forth the requirements under which an applicant is to present evidence of execution of a Federal lessee protection bond or undertaking. A bond is required when the applicant cannot obtain written consent from the Federal lessee or permittee of the surface estate to enter and commence surface coal mining operations. In lieu of written consent the bond secures payment of any damages to the surface estate for damage to the crops or tangible improvements of the lessee or permittee caused by surface coal mining operations.

2. Several commenters suggested that the Federal performance bond should be reduced by the amount covered by the Federal lessee protection bond. Their rationale is that this would eliminate double coverage, as they believe the Federal lessee protection bond would cover some of the damages covered by the performance bond.

The Office analyzed two alternatives to the proposed language of Section 742.13. The first would require clarification of the requirements of the Federal lessee protection bond and the performance bond to avoid overlap. The Office rejected this alternative, as the requirements of Sections 742.12 and 742.13 clearly indicate that the bonds in question are for separate purposes. Section 715 of the Act also specifies that, the Federal permittee or lessee shall be protected from damages to the surface estate which the operations will cause to the crops or tangible improvements; the amount of the bond must be set by a court if the Federal lessee and the operator cannot agree.

A second alternative would provide reduction of the performance bond by the amount of the Federal lessee protection bond as suggested by the commenters. This alternative was also determined unacceptable. Performance bonds provide protection for compliance with terms, conditions, and stipulations of a lease, license, or permit issued pursuant to the Mineral Leasing Act of 1920, as amended, and the Surface, Mining Control and Reclamation Act of 1977. Federal lessee protection bonds, on the other hand, are for the benefit of a Federal lessee having certain specified authorized uses of the surface of the land subject to mining. As previously indicated, the two bonds in question cover separate values and do not overlap.

§ 742.12 Performance bonds.

§ 742.15 Form of performance bonds.

§ 742.16 Terms and conditions of performance bonds.

Proposed Sections 742.12, 742.15, and 742.16 set forth provisions for performance bonds covering surface coal mining and reclamation operations on Federal lands. These Sections precluded self-bonding on Federal lands to ensure the highest level of protection possible for public resources.

1. Numerous comments were received objecting to the exclusion of self-bonding on Federal lands. Commenters generally argue that prohibition of self-bonding in Sections 742.12, 742.15, and 742.16 will not provide any higher standard of protection of public resources. They further indicate that self-bonding is permitted in other Interior-related programs, e.g., oil and gas operations. Consequently, they believe prohibition of self-bonding for surface coal mining and reclamation operations is discriminatory.

The Office thoroughly examined the alternative to extend self-bonding requirements to operations involving Federal lands. Authority for self-bonding is contained within the framework of Section 509(c) of the Act, provided the regulatory authority chooses to exercise the option to permit self-bonding.

In its review the Office decided that the prohibition of self-bonding could discriminate against certain segments of the coal mining industry. Further, the Office believes that the requirements for self-bonding in 30 CFR 806.11(b) are sufficiently detailed and comprehensive to ensure a high-level of protection for Federal lands. Additionally, the Preamble to the proposed rules specifically invited comments on the bonding issue, and the Office did not receive any comments supporting exclusion of self-bonding on Federal lands. The Office has, therefore, elected to adopt the commenters alternative permitting self-bonding on Federal lands.

2. Section 742.12 has also been restructured to include a new Paragraph (b) indicating that performance bonds must be made payable to both the State and the United States where a State-Federal cooperative agreement is in effect. This protects both the Federal stewardship responsibility and the State regulatory authority responsibility in the event of default.

3. Section 742.15 establishes the form of performance bonds. A new Paragraph (c) has been added to reflect the Office's decision to permit self-bonding under the requirements of 30 CFR 806.11(b). The reader should review the discussion of Part 806 in the Preamble as to the basis for determining self-bonding acceptability.

4. Section 742.16 sets forth terms and conditions of performance bonds, including the duration and area covered by the bond. Paragraph (b) of the proposed rules has been deleted, because this requirement is already covered by Section 742.14. Paragraph (c) of the proposed rules has been renumbered (b), accordingly.

§ 742.17 Terms and conditions for liability insurance.

1. Section 742.17 of the proposed rules outlined the terms and conditions for liability insurance for Federal lands. As with the performance bonding requirements of Section 742.12, it was proposed that the self-insurance provisions of 30 CFR 806.14(d) not apply on Federal lands. The intent was to provide the highest level of liability insurance protection for operations involving Federal lands.

Comments concerning the exclusion of self-insurance provisions were similar to those received on the self-bonding issue. Commenters generally expressed concern that the provision to exclude self-insurance on Federal lands would not provide added protection and that it is discriminatory to permit self-insurance on private lands and exclude Federal lands. No comments were received in support of the exclusion.

Based upon the comments received the Office reviewed its position concerning the exclusion of the self-insurance provision on Federal lands. The Office considered two alternatives. The first would be to authorize self-insurance on Federal lands without regard to the position taken by the States. Consideration was given to inequity which would result in situations were intermingled Federal and private lands were included in a Federal permit and the State had elected not to permit self-insurance on private lands. The second alternative would be to authorize self-insurance on Federal lands only in instances where a State has established self-insurance requirements in an approved State program which comply with 30 CFR 806.14(d). Adoption of this alternative would

avoid any conflict between State and Federal rules on the matter. Accordingly, the Office elected to adopt this alternative.

§ 742.18 Release of bonds.

Section 742.18 establishes requirements for release of bonds on Federal lands. This Section has been modified by including a new Paragraph (c), specifying that the Regional Director must notify and consider the non-Federal surface owners comments prior to releasing a performance bond. Proposed Section 742.18(c) has been renumbered Section 742.18(d).

PART 743—INSPECTIONS, ENFORCEMENT, AND CIVIL PENALTIES—FEDERAL LANDS

This Part sets forth responsibilities and procedures for inspection of surface coal mining and reclamation operations and assessment of civil penalties on Federal lands. It also specifies general operator obligations as they relate to right of entry and availability of records and equipment for inspection by the authorized officer and the public.

Authority for this Part is contained in Section 102, 201, 517, 518, 521, 523, and 525 of Pub. L. 95-87, 91 Stat. 448, 449, 498, 499, 504, 510, and 511 (30 U.S.C. 1202, 1211, 1267, 1268, 1271, 1273, and 1275); and 41 Stat. 437, as amended (30 U.S.C. 181 et seq.).

§ 743.4(a) Responsibilities.

1. Section 743.4(a) specifically addresses the Regional Directors' responsibility for inspection and enforcement of coal exploration and surface coal mining and reclamation operations on Federal lands within the permit area to ensure compliance with all applicable performance standards and requirements of the approved exploration or mining permit.

2. One commenter suggests this provision is not in accord with Section 512(e) of the Act which states that coal exploration on Federal lands shall be governed by Section 4 of the Federal Coal Leasing Amendments Act of 1975 (90 Stat. 1085). The commenter asserts that under this Section of the Act the Secretary is authorized to issue exploration licenses on unleased Federal coal; exploration licenses are not to be issued on leased Federal coal. Therefore, the commenter believes that the language of Section 743.4(a) is usurping power which Congress did not intend for the Office to have.

The commenter's rationale regarding the Secretary's authority and responsibility under Section 4 of the Federal Coal Leasing Amendment Act of 1975 is correct. However, neither Section 743.4(a) or any provision of subchapter D require a coal exploration license on leased lands, as suggested by the commenter. This Section is intended to bring exploration operations, not covered by other provisions of law, under regulatory control, thereby affording protection against surface disturbance and adverse environmental impacts, as intended by the Act. The commenter's suggestion that this Section be deleted was, therefore, not accepted. Instead, a new Section 740.4(h) has been added to clarify Federal agency responsibilities as they relate to exploration operations on: (1) unleased lands; (2) leased land outside a permit area; and (3) permitted lands.

3. Section 743.4(c) outlines the Mining Supervisor's inspection and enforcement responsibilities as they relate to development, production, and resource recovery, including royalty audits and other non-Field inspections.

One commenter interprets this Section to give the Mining Supervisor the authority to inspect and enforce all terms, conditions and stipulations, including environmental protection standards, of the lease, license, or permit issued pursuant to the Mineral Leasing Act of 1920, as amended, and the Surface Mining Control and Reclamation Act of 1977. The Office has reviewed the provisions of Section 743.4(c) and believes that, as stated, the requirements of this Section clearly limit the Mining Supervisor's area of compliance responsibility to development, production, resource recovery, etc., as required by the Mineral Leasing Act of 1920. Commenter's suggested alternative to add the additional language "except for site specific requirements relating to protection of the environment" was not accepted.

4. Section 743.4(d) of the proposed rules specified that the authorized officer of the surface managing agency shall inspect leases and permit areas to ensure protection of non-coal Federal resources and the postmining use of affected lands. The intent is to insure that the surface managing agency, with its special expertise, has adequate administrative control and enforcement of provisions relating to non-coal resources over which it has management responsibility. One commenter suggested deleting this entire Paragraph, indicating it perpetuates "duality" of administration between the Office and other Federal agencies. As proposed, the commenter concludes, the surface managing agency would play nearly an identical role as the Office and the State in the inspection and enforcement of terms, conditions, and stipulations of a lease, license, or permit.

The Office analyzed two alternatives to the proposed rules. Deleting Section 743.4(d) entirely, as suggested by the commenter, was determined unacceptable as it eliminates recognition of the responsibilities of the surface managing agency under laws other than SMCRA. Such action, the Office believes, is also contrary to the Administrative Procedures Act which provides for public disclosure of governmental processes, and procedures.

A second alternative to the proposed rules involves clarification of Section 743.4(d) to indicate that the surface managing agency is responsible for administration and enforcement of laws and regulations dealing with the use and disposal of non-coal resources and materials. This alternative clearly separates the surface managing agency's role from OSM's, thus removing any doubt for management responsibility over non-coal resources. The Office elected to adopt this alternative by revising Section 743.4(d) to indicate that the surface managing agency has the responsibility to ensure compliance and enforcement of other Federal regulations and laws relating to the use and disposal of other non-coal resources and unleased non-coal minerals in the permit area, except those uses authorized under the terms, conditions, and stipulations of the lease, license, or permit pursuant to surface coal mining operations.

§ 743.11 General obligations.

1. Section 743.11(a) sets forth "right of entry" provisions required of the operator. As proposed this Section described right of entry as including the access and means for any authorized Federal employee to inspect mining operations. The intent of these provisions is to implement Section 517(e)(8) which provides that the regulatory authority shall have a right of entry to any surface coal mining and reclamation operation.

2. One commenter suggested that the requirement that the operator provide "access and means," to the mine site is unreasonable. The commenter indicates that in circumstances involving early development of mines in remote areas, the provisions of Section 743.11(a) would be construed to require a light plane or helicopter to be on 24-hour standby. The commenter suggests that the regulations be revised to require that the operator be required to provide the use of landing facilities only.

The Office elected to accept the commenter's suggestion and has deleted "means" inasmuch as Section 517(a)(3) of the Act does not require an operator to provide a means of inspection.

3. Section 743.11(b) establishes operator requirements for making appropriate records and monitoring equipment available to authorized inspection officials. The purpose is to ensure

prompt availability of records and monitoring equipment to ensure compliance with all appropriate Federal laws and regulations.

Comments received suggested that Section 743.11(b) should be modified to specify that only records required by the Act and the regulations promulgated thereto should be subject to the provisions of this section. Commenters do not believe the authorized representative should have access to or copy records not required by the Act or regulations or those records not associated with demonstrating compliance. Additionally, the commenters suggest adding the language, "If any such records which are copies are marked or considered confidential by the operator, the copies will be treated as confidential and not disclosed to the public."

The Office concurs with the commenters' argument that records which must be made available to the authorized officials be limited to those required under Section 517 of the Act and the regulations. Section 743.11(b) has been revised accordingly.

This Office believes commenters' concerns regarding confidentiality of records is covered by Sections 507(b)(17) and 508 (a)(12) and (b) of the Act which specifically designate information which may or may not be disclosed to the public. These provisions, the Office believes, are adequate to protect the operator from public disclosure of confidential material. The Office, therefore, did not elect to revise Section 743.11(b) to include the suggested additional language relating to restrictions on the release of confidential information.

4. Section 743.11(c) has been revised to indicate that search warrants will not be needed by authorized Federal representatives when conducting inspection and enforcement duties under Paragraph (a) of this Section, or when reviewing/copying records or inspecting monitoring devices under Paragraph (b) of this Section.

PART 744—PERFORMANCE STANDARDS FOR FEDERAL LANDS

Part 744 establishes requirements for compliance with performance standards for exploration and mining and reclamation operations on Federal lands. This includes compliance with performance standards upon completion of operations or abandonment.

Authority for this Part is contained in Sections 102, 201, 508, 512, 515, 516, 517, 519, 523, 701, and 717, of Pub. L. 95-87, 91 Stat. 448, 449, 478, 483, 486, 490, 495, 498, 501, 510, 516, and 526 (30 U.S.C. 1202, 1211, 1258, 1262, 1265, 1266, 1267, 1269, 1273, 1291, 1301, and 1307); and 41 Stat. 437, as amended (30 U.S.C. 181 et seq.).

1. One commenter indicated that the provisions of Part 744 do not explicity specify that the Secretary may require revision of mining plans to meet changing conditions, correct oversites, or implement new statutory requirements. The commenter proposed this section be revised to include a provision authorizing the Mining Supervisor or the Regional Director, as appropriate, to require the operator to revise or supplement an approved plan to correct oversites, or to meet new statutory requirements.

The Office elected not to accept the commenter's proposed revision of Part 744. The Office believes the added provisions suggested by the commenter are adequately covered under Section 741.24, which requires the Regional Director to review issued permits and to make reasonable revision or modification of permit provisions to ensure compliance with the Act and other Federal or State laws.

Sections 744.11(a), (a)(1), (a)(2) and (a)(3) have been renumbered Section 744.11, (a), (b) and (c) respectively.

§ 744.11 Performance standards: Exploration.

1. Section 744.11 sets forth requirements for coal exploration activities on Federal lands within a permit area. The purpose is to ensure that exploration operations or related activities which are not subject to regulation under the Mineral Leasing Act of 1920, as amended or 30 CFR 211, are conducted in a manner which is in full compliance with the Surface Mining Control and Reclamation Act of 1977.

2. One commenter objected to the provisions of Section 741.11 in general, indicating that OSM does not have any authority to regulate any type of coal exploration on Federal lands even if exploration occurs within an area which is permitted for surface coal mining. The commenter, therefore, suggests deleting Section 744.11 in its entirely.

For the reasons stated previously in the discussion of Section 740.2 the commenter's suggestion to delete the provisions of Section 744.11 was not accepted.

§ 744.12 Performance standards: Mining and reclamation.

1. Section 744.12 sets forth requirements for performance standards for mining and reclamation operations. Paragraph (a) of this Section specifies that all surface coal mining and reclamation operations on Federal lands must comply with the performance standards in Subchapter K of these regulations and any terms and conditions of the lease, license or permit. The intent is to notify the operator of all compliance standard requirements.

2. One commenter suggested adding a paragraph to Section 744.12 specifying that all surface coal mining and reclamation on Federal lands shall be conducted pursuant to the performance standards in 30 CFR 211 and any terms and conditions of the lease, license, or approved permit. This revision would specifically consider the requirements of 30 CFR 211.

In reviewing Section 744.12, the Office concurs that reference to operator requirements to comply with the performance standards of 30 CFR 211 should be noted. Accordingly, Section 744.12(a) is revised to recognize that the operator must also comply with the regulations promulgated under the Mineral Leasing Act, as amended (30 U.S.C. 181 et seq.).

3. Section 744.12(c) sets forth operator and mining supervisor responsibilities when mining operations are being conducted in sensitive areas and when such operations encounter or have the potential for disturbing such areas. The intent of these provisions was to provide early warning and assessment of the consequences should mining activities be permitted to continue in the area.

Comments on Section 744.12(c) indicate that the mining supervisor should be required to notify the operator in writing within 15 calendar days of his decision to allow operators to continue in situations where unsuspected wells or bore holes are encountered. The commenter alleges that under the emergency circumstances of Section 744.12(c), the operator should be entitled to written certification of the mining supervisor's decision within a specified time-period.

The Office did not accept the suggested alternative as it is beyond the purview of these regulations to require the mining supervisor to respond within a fixed number of days. Since issues covered by this section relate primarily to the responsibility of the mining supervisor under 30 CFR 211, the Office has elected to delete Section 744.12(c) in its entirety.

§ 744.13 Performance standards: Completion of operations and abandonment.

1. Section 744.13 sets forth operator requirements for completion of operations and abandonment, including provisions for public notification and participation in such actions.

2. One commenter suggested that all reference to the term "approved plan" in Section 744.13 should be changed to read "approved permit." The commenter did not provide any rationale for the proposed change.

The text of Section 744.13 has been revised and now excludes the term "approved plan." Deletion is a result of editorial corrections.

3. As proposed Section 744.13(a) specified the protective actions which an operator must implement upon temporary abandonment of a mining operation. The intent is to afford optimum protection for people and animals against hazards associated with mining and reclamation operations.

Several commenters indicated that language requiring that protective devices be placed around "areas prone to subsidence" is vague and unnecessarily open-ended. They contend that such areas are difficult to determine, and that the provisions for protecting surface facilities which present a hazard under Section 744.13(a) are adequate to achieve the intent of this Section.

After reviewing Section 744.13(a), editorial corrections have been made which incorporate the abandonment provisions of 30 CFR 816.131 and 817.131 by reference. Thus, the specific requirements of the proposed Section 744.13(a) rules are unnecessary. This revision eliminates all reference to "subsidence" and the concern expressed by the commenters.

Section 744.13(d) as proposed required the Regional Director to notify a non-Federal surface owner and consider his/her comments before recommending that the appropriate bond liability be terminated. The purpose and intent of this provision is to provide for surface owner participation in bond release proceedings and to ensure satisfactory reclamation or restoration of the surface and facilities thereon.

One commenter indicated that this provision is neither authorized nor needed and should be deleted. The owners of fee surface overlying Federal coal, contends the commenter, are sufficiently protected by Section 714 of SMCRA (30 U.S.C. 1304) and the regulations promulgated thereunder.

Deletion of Section 744.13(d), as suggested by the commenter, was determined unacceptable because it would cause omission of an important requirement of Section 744.13: Completion of Operations and Abandonment. Further, the provisions of Section 714 of the Act relate only to consultation and consent of surface owners to issuance of a Federal coal lease and afford no protection of surface owners' property rights, after a lease has been issued. The Office believes this requirement is reasonable and within the intent of the Act. Instead, the Office elected to revise the text of Section 744.13(d).

PART 745—STATE-FEDERAL COOPERATIVE AGREEMENTS

Part 745 sets forth procedures for the formulation and administration of State-Federal cooperative agreements authorized under Section 523(c) of the Act. This Part also describes the provisions which must be included in an agreement, establishes criteria for approval of agreements, and lists authorities and responsibilities reserved to the Secretary. The objective of this Part is to provide for uniform application of environmental and reclamation standards to surface coal mining operations within a State through the exercise of regulatory authority by the State.

Authority for this Part is contained in Sections 102, 201, 503, 507, 517, 518, 521, and 523 of Pub. L. 95-87, 91 Stat. 448, 449, 470, 474, 498, 499, 504, and 510 (30 U.S.C. 1202, 1211, 1253, 1257, 1267, 1268, 1271, and 1273); and 41 Stat. 437, as amended (30 U.S.C. 181 et seq.).

Sections 745.11(b)(7), 745.11(f)(4), 745.12(c), 745.14 and 745.18 have been deleted. In Section 745.11, Paragraphs (b)(8) and (b)(9) have been renumbered Sections 745.11(b)(7) and (b)(8), respectively. In Section 745.12, Paragraphs (d), (e), and (f) have been redesignated Sections 745.12 (c), (d), and (e). A new Paragraph (f) has been added to Section 745.12. Deletion of Section 745.14 has resulted in renumbering subsequent Sections 745.15 through .17. Deleted Section 745.18 has not been replaced.

1. A number of comments received objected to the promulgation of any regulations under this Part. Commenters suggested that the public would be totally confused by these regulations and that the provisions of Part 745 will be inconsistent with existing cooperative agreements executed under 30 CFR 211. Commenters further specify that the proposed rules are contrary to harmonious relationships with the various affected States, forcing them to accept unreasonable terms.

The Office has elected not to accept the suggested deletion of all provisions under Part 745. As stated in the preamble to the proposed rules, failure to promulgate regulations implementing Section 523(c) of the Act would leave the States, particularly those which will become eligible for agreements, and the public completely uninformed about the procedures for entering into cooperative agreements and the terms and conditions of such agreements and the circumstances under which such agreements may be modified or terminated. The Office further believes that publication of these rules is mandated by the Administrative Procedures Act (5 U.S.C. 552) which provides that rules of procedures and substantive rules of general applicability, adopted as authorized by law and statements of general policy or interpretation of general applicability, shall be published in the FEDERAL REGISTER.

In reviewing its decision to publish final regulations governing the execution and administration of cooperative agreements, the Office does not believe that agreements executed under 30 CFR 211 will be inconsistent with the Part 745 regulations. The Office, however, wishes to clarify any confusion or misunderstanding of the relationships between the existing cooperative agreements and the requirements of Part 745 as follows:

After the effective date of the regulations in Part 745, pursuant to the requirements of Section 523 of the Act, existing State-Federal cooperative agreements, entered into pursuant to 30 CFR 211.75, must be revised to permit States to administer and enforce the permanent program performance standard requirements of 30 CFR 816-828, as appropriate. Upon approval of a State program, such existing cooperative agreements may be amended pursuant to 30 CFR 745.12. Failure to amend an existing cooperative agreement to bring it into full compliance with the permanent regulatory program will cause termination of the agreement in accordance with Article IX, Paragraph (c) of the respective existing cooperative agreements. The revised cooperative agreements, when adopted in final form, will appear at 30 CFR 746 rather than at 30 CFR Part 211.

§ 745.2 Objectives.

Section 745.2 sets forth the objectives of this Part, providing for State regulation of surface coal mining operations on Federal lands where State-Federal cooperative agreements are in effect. Several commenters suggested that this Section be expanded to specifically point out that one of the major objectives of cooperative agreements under Section 523(c) of the Act is to eliminate "duality" of administration and enforcement of surface coal mining and reclamation operations. They contend that such objective is also consistent with Article I, Purpose, of existing cooperative agreements.

The Office believes that total elimination of "duality" of administration is not feasible, because the Secretary is prohibited by law from delegating certain responsibilities to a State. Section 523(c) of the Act, for example, specifically prohibits the Secretary from delegating to States responsibility for approving mining plans or for designating certain Federal lands unsuitable for mining. Nevertheless, the Office concurs with the commenters' alternative language to the extent that duality of administration should be eliminated wherever authorized under a State-Federal cooperative agreement. The Office has, therefore, adopted the commenters' suggestion to revise Section 745.2, to specifically

indicate that State regulation of surface coal mining and reclamation operations will be accomplished under cooperative agreements, the basic purpose of which is to reduce duality of administration and enforcement. This revision, the Office believes, is responsive to the commenters and is consistent with the language of existing cooperative agreements.

§ 745.4 Responsibilities.

1. Section 745.4 sets forth responsibilities and procedures for entering into, approving, revising, terminating, administering, and enforcing cooperative agreements. As proposed, the rules were silent with respect to the State regulatory authority's responsibilities for administering, maintaining, and enforcing State-Federal cooperative agreements. This Section has, therefore, been revised, by adding a Paragraph (d), to recognize the responsibility of the State regulatory authority.

§ 745.11 Application and agreement.

1. Section 745.11 establishes procedures and information requirements for submitting applications for cooperative agreements. One commenter recommended that a new provision should be added prohibiting the Secretary from entering into a cooperative agreement until he has obtained the written concurrence of the Administrator of the Environmental Protection Agency (EPA). The commenter suggests this change would be merely an extension of Section 503(b)(2) of the Act which requires such action for approval of a State program.

The Office has elected not to accept the commenter's suggested revision to provide for EPA concurrence on certain environmental provisions prior to the Secretary's approval of a cooperative agreement application, because such a requirement would be redundant. The provision for EPA concurrence, as stated by the commenter, is required pursuant to Section 503(b)(2) of the Act for State program approval. Since cooperative agreements cannot be executed until after a State program is approved it therefore follows that administration and enforcement under a State-Federal cooperative agreement must be conducted in full accord with the necessary requirements for a State program.

2. The intent of Section 745.11(a) is to authorize the Governor of any State, having an approved State program, to request that the Secretary enter into a State-Federal cooperative agreement. Such authorization is restricted to the Governor to ensure that the highest-ranking official in the State is fully informed of a State's intentions to accept administration and enforcement of surface coal mining operations on Federal lands.

Comments suggest that authorization to request the Secretary to enter into a cooperative agreement be expanded to include the State regulatory authority. One commenter indicates that in his State, existing State law does not permit the Governor to exercise jurisdictional responsibility over surface coal mining operations. Authorizing the State regulatory authority to enter into agreements would provide the necessary flexibility to meet individual state needs.

The Office did not adopt the alternative language for the reason that Section 745.11(a) only requires the Governor to submit the request. Execution of the agreement may remain the responsibility of the State regulatory authority.

3. Section 745.11(b), requires that a request to enter into a cooperative agreement include various data. The intent of this data requirement is to assist the Office in determining if the State regulatory authority has conflicting responsibilities which could impair its ability to carry out the administrative and enforcement requirements of a State-Federal cooperative agreement.

Some comments received allege that the requirements of Section 745.11(b) are too burdensome. They contend that information submitted to OSM under the State program is sufficient and additional data requirements of Section 745.11(b) are unnecessary.

One commenter suggested that all references to branches of government not concerned with mining activities should be deleted from the provisions of Section 745.11(b)(2). The commenter indicates that OSM should not be concerned with non-mining related government entities.

Other comments received on the proposed Section 745.11(b)(3) indicate that the Office should not be concerned with data relating to the location and area of non-Federal lands that will not interfere with mining on Federal lands. One commenter recommends restating the provisions of Section 745.11(b)(3) to include information relating only to non-Federal lands adjoining Federal lands.

Another commenter suggested that Section 745.11(b)(4) be revised to exclude the requirement for data relating to the disciplines and salaries of State regulatory authority personnel. The commenter sees no reason to disclose such information which pries into State affairs and in no way is associated with mining activities.

Section 523(c) of the Act requires that the Secretary determine in writing that a State has the necessary personnel and funding to fully implement a cooperative agreement. Generally, information submitted with the State program is of sufficient detail to permit such determination. The Office believes, however, that the data required in Section 745.11 is necessary to properly evaluate a State's capability to administer a cooperative agreement. Nevertheless, the Office has reviewed all the requirements of Section 745.11(b) and has determined that only Section 745.11(b)(7), which requires a description of office space, vehicles, laboratory and testing facilities and associated costs, is unreasonably burdensome. This requirement has, therefore, been deleted from the final rules.

The Office has also reviewed the requirements of Sections 745.11(b)(2) and 745.11(b)(3) and has determined that deletion of these requirements, as suggested, would affect the Office's capability to determine the ability of a State regulatory authority to administer and enforce a State-Federal cooperative agreement. The Office believes that it is necessary to know the entire range of functional responsibilities under the jurisdiction of the State regulatory authority, including staffing requirements, to determine if the State regulatory authority can efficiently and effectively assume the additional workload of administering and enforcing surface coal mining and reclamation operations on Federal lands. The Office, therefore, elected not to adopt the commenter's suggestion.

The Office concurs with the comment that Section 745.11(b)(4) should be revised to exclude requirements for submission of data relating to staff disciplines and salaries. Deletion of this requirement will not impair the Office's ability to determine State costs of administering a cooperative agreement and for evaluating and taking action on grant requests incident thereto. Section 745.11(b)(4) has been amended accordingly.

4. Section 745.11(b)(9) of the proposed rules (745.11(b)(8), as renumbered) specified that the Attorney General of the State must certify that the State regulatory authority has the necessary legal and administrative powers to fully administer a cooperative agreement. The purpose of this requirement is to ensure the Office and the Secretary that State administration and enforcement of surface coal mining operations on Federal lands will not be impaired or jeopardized by conflicting State law, regulation, or policy provisions.

Several comments received expressed concern that a State Attorney General can only interpret State laws and regulations and cannot certify policy provisions over which he has no control; rather, policy certification should be the responsibility of the State regulatory authority.

In reviewing the provisions of proposed Section 745.11(b)(9), the Office determined that the purpose and intent of this rule, i.e., to limit Attorney General certification requirements to State laws, regulations and other legal areas within the purview of the Attorney General's responsibility, was not clearly stated. The Office has, therefore, elected to revise the requirements of this section by specifically limiting the certification requirement to "State laws, regulations, or legal constraints." To provide additional flexibility at the State level, the Office also has expanded certification authority to include the chief legal officer of the State regulatory authority, where such a position exists. This additional flexibility allows State agencies which are independent State regulatory agencies to rely upon their own legal counsels.

5. Section 745.11(d) sets forth public hearing requirements for State-Federal cooperative agreements. It provides that such hearings may be combined with similar hearings for the State program submission under 30 CFR 732. The intent is to eliminate, to the extent practical, duplication of hearings, and to reduce administrative costs.

Several commenters objected to the consolidation of public meetings under Section 745.11(d). While acknowledging that such a procedure might streamline the process and reduce costs, they contend that such practice may confuse the public. They believe that misunderstandings would arise with respect to statements on one proposal, thought to apply to another, e.g., comments on the State program applying to the cooperative agreement. The commenters, therefore, believe that the approval process for State programs and cooperative agreements should be clearly separated.

The Office agrees with the commenters that one public hearing, dealing with both the State program and the cooperative agreement, may have some potential for confusing the public; however, such procedures may also be beneficial by permitting the public an opportunity to better understand the relationships between the two. The Office believes that the positive attributes of combining the public hearings, wherever possible, will provide for greater public understanding of State programs and their relationship to State-Federal cooperative agreements. For this reason, the Office elected not to adopt the commenters' recommendation that separate public hearings relating to cooperative agreements be required.

6. Section 745.11(e) provides for consultation with various Department of Interior agencies and other surface managing agencies prior to the expiration of the public comment period on requests for State-Federal cooperative agreement. The purpose of this requirement is to ensure that all Federal agencies having direct interest in surface coal mining and reclamation operations, are fully aware of the contents of the proposed cooperative agreement, and they have been afforded an opportunity for comment.

One commenter suggested that the Environmental Protection Agency (EPA) be included in the "list" of agencies that must be consulted under the provisions of Section 745.11(e). The commenter believes that the EPA, with its statutory responsibilities under the Federal Water Pollution Control Act and the Clean Air Act, should be consulted along with other agencies and sees no reason to limit the list to surface managing agencies when the Act is concerned with environmental impacts on air and water as well.

In setting forth the requirements of Section 745.11(e), the Office intended to identify only those agencies which have immediate, direct relationships to surface coal mining and reclamation operations on Federal lands. Consultation with the Fish and Wildlife Service is required by Section 7 of the Endangered Species Amendments Act of 1973 as amended (16 U.S.C. 1531-1543) and the Department regulations in 50 CFR Part 42 (43 FR 874, January 4, 1978) which requires Federal agencies to consult with the Service whenever it determines its activities or programs may affect species or their habitat which are designated as endangered.

The Office believes that adding EPA to the required list would set a precedent, requiring the listing of all Federal agencies having even a remote interest in surface coal mining and reclamation activities. Rather, it is intended that other Federal and non-Federal agencies provide input during the public hearing and comment period, as provided in Section 745.11(c). EPA, in particular, is also consulted in the State program approval process in accordance with Section 732.13(b)(1). For these reasons, the Office did not accept the recommendation to include EPA in the list of agencies to be consulted under the provisions of Section 745.11(e).

7. As previously indicated, numerous comments objected to the promulgation of any regulations in Part 745. Commenters acknowledged, however, that if regulations dealing with State-Federal cooperative agreements are published, Section 745.12 should be revised to include all the provisions of Sections 745.13 through 745.18. Commenters contend that such revisions would eliminate redundancy and unnecessary regulations. According to the commenters, the proposed changes also would provide the Office and the States with greater flexibility to make cooperative agreements responsive to the individual State needs. The following discussion on Sections 745.13 through 745.18 pertains to the commenters suggested revision of Section 745.12 in general.

Section 745.13 describes those authorities which the Secretary cannot delegate to any State. As discussed in the Preamble to the proposed rules such delegation is prohibited by Section 523(c) of the Act, the Mineral Leasing Act and court decisions on the National Environmental Policy Act.

Comments on this Section recommended deletion of Section 745.13, since they believe "reservation of authority" is adequately covered under Section 745.12(b). The Office did not accept this recommendation, since the authorities set forth in Section 745.13 are non-delegable and cannot be subjected to negotiation in the process of formulating a cooperative agreement.

8. Section 745.14 of the proposed rules provided that the State regulatory authority be responsible for enforcement of all applicable rules and regulations under the terms of a cooperative agreement. The Office concurs with the commenters' suggestion to incorporate these provisions in Section 745.12, because Section 745.14 is basically repetitive, its provisions generally contained within the framework of Section 745.12(a). The Office has, therefore, adopted the commenters' alternative to delete Section 745.14. Correspondingly, Section 745.12(a) has been modified slightly to indicate that the State regulatory authority is obligated to both enforce and inspect for compliance with performance standards required under the State's approved program.

9. Section 745.15 of the proposed rules (Section 745.14 as renumbered) specifies the conditions for amending cooperative agreements. All amendments are to be adopted by rulemaking.

The Office did not accept the commenters' suggestion to delete this Paragraph. Although some conditions for amending cooperative agreements are adequately covered by Section 745.12(c), the Office believes that the requirement to adopt amendments through the rulemaking process is not appropriate for inclusion as a term in the cooperative agreement which is the alternative location for this requirement. Further, analysis of Section 745.12(c) indicates that its provisions are more specifically covered by Sections 745.15 through 745.17; thus, the Office has elected to delete Section 745.12(c).

10. Sections 745.16 and 745.17 of the proposed rules (Sections 745.15 and 745.16 as renumbered) contain specific

requirements for terminating or reinstating cooperative agreements. Such requirements, the Office believes, should not be couched in the framework of the general terms set forth in Section 745.12, as suggested by several commenters. For this reason, the Office did not accept the commenters' alternative to delete these requirements and incorporate them into Section 745.12(c).

11. Section 745.13 of the proposed rules set forth the procedures to be followed by the State regulatory authority in the administration of cooperative agreements. These requirements have been deleted in their entirety, because they are redundant or have been incorporated into the provisions of Section 745.12. For further analysis of these revisions, the reader is referred to the Preamble discussion for Section 745.12(a) and (b).

12. Section 745.12(d) of the proposed rules (745.12(c) as renumbered) provided for regular reports by the State regulatory authority to the Regional Director. Such reporting is intended to keep the Regional Director informed of State administration and enforcement of surface coal mining and reclamation operations on Federal lands. One commenter suggested that this provision should be much more specific. He pointed out that OSM monitoring of State compliance will be largely contingent on the availability of data on State enforcement practices, and that while State regulatory authorities will be required by Section 840.14 to supply such information there must be separate identification of data relating to Federal lands. Only in this manner, the commenter contends, can OSM use its limited fiscal and manpower resources effectively and efficiently in administering the Act. No specific text was provided by the commenter.

The Office has analyzed this recommendation and has concluded that given the requirement in 30 CFR 840.14 that the State regulatory authority shall make available to the Director and the Regional Director copies of all documents relating to permits and inspection and enforcement actions, there is no justifiable basis for including a duplicative requirement in this Part. Moreover, considering the variations in State programs from State to State, the preferable procedure is to include specific reporting formats and data presentation requirements in each individual cooperative agreement. For these reasons, the Office elected not to accept the commenter's suggestions.

13. Section 745.12(f) of the proposed rules (Section 745.12(e) as renumbered) required that cooperative agreements contain terms for cooperation among the State regulatory authority and the various involved Federal agencies to be included in the cooperative agreement. The purpose of such terms is to identify responsibilities and to establish lines of communication between the State regulatory authority and the Federal agencies having direct resource management responsibilities or regulatory control over surface coal mining operations.

One commenter suggests that the provisions of Section 745.12(f) of the proposed rules imply a settling of differences among Interior agencies within the framework of a cooperative agreement. The commenter contends that States should not be subject to such Federal government jurisdictional problems. The commenter further indicates that the provisions of Section 745.12(f) of the proposed rules conflict with at least one existing cooperative agreement, which provides that OSM is to act as a contact point with the State. For these reasons the commenter recommends deleting this provision.

The Office analyzed two alternatives to the proposed rules in Section 745.12(f). Deleting the requirement entirely, as suggested by the commenter, is unacceptable. Although OSM will serve as the principal contact point for the State, there will always be a need for some contact between the States and other Federal agencies on mining-related problems. The Office believes that such needs must be set out in the cooperative agreement to identify jurisdictional responsibilities, areas of special expertise, and to establish lines of communication.

A second alternative examined by the Office would be to make a minor language revision in Section 745.12(f) to provide for "coordination" among the various agencies in lieu of "cooperation" as originally stated. This option, the Office believes, permits retention of an important requirement that cooperative agreements establish clearly identified lines of communication between the State regulatory authority and the various Federal agencies. At the same time, the Office believes that this change is responsive to the commenter's concern "that the State-Federal cooperative agreement will be used as an instrument for settling Federal agency differences." This alternative was, therefore, determined most acceptable. Section 745.12(f) of the proposed rules (Section 745.12(e) as renumbered) has been revised accordingly.

§ 745.13 Authority Reserved by the Secretary.

1. Section 745.13 describes various authorities reserved to the Secretary. The purpose is to inform the States and the public of functional responsibilities which the Secretary cannot delegate to the States. One commenter recommends that this Section be amended to allow States the authority to enforce Federal and State statutes designed to protect cultural resources. The commenter contends that this Section fails to recognize a State's interest in the cultural resources and information located within the boundaries of the State.

The Office believes that amending Section 745.13, as suggested by the commenter, is inappropriate. Section 745.13 describes authorities reserved to the Secretary and is, therefore, not the appropriate place to delegate enforcement authority to the States. Further, the Office believes that State regulatory authority for enforcing provisions relating to cultural resources, although not specifically stated, is adequately covered under Section 745.12, which requires that agreements contain terms obligating the State regulatory authority to enforce the requirements of approved State programs. State involvement in the protection of cultural resources is also authorized under the Historic Preservation Act of 1966 which permits States to prepare comprehensive Statewide historic surveys and plans for preservation, acquisition, and development of National Register properties. Under 36 CFR 800, Interior agencies are required to consult with the State Historic Preservation Officer, prior to implementing any Federal action. For these reasons, the Office elected not to accept the commenter's suggested revision of Section 745.13.

2. One commenter recommends deleting Paragraphs (b), (c), (i), and (k) of Section 745.13. This same commenter proposed adding a new Paragraph (i) which would not preclude the Secretary from joint preparation of environmental assessments or development of land use plans. The commenter contends that the proposed rules (b) and (c) of this Section preclude preparation of joint environmental assessments and land use planning mechanisms in place in the States. The commenter further asserts that there is no statutory authority for Paragraph (i), which reserves authority for approval or significant modification of mining plans on Federal lands to the Secretary. Similarly, the commenter contends that there is no authority for the provisions of Paragraph (k), concerning approval of postmining land use for Federal lands. This latter provision, states the commenter, "ignores the right of a State to regulate its end-use (of) private surface or impose stricter laws." This provision, according to the commenter, thus appears to preclude enforcement of a more stringent State's statute, and would be beyond the intent of Congress.

The Office does not believe that the provisions of Section 745.13(b) and (c) preclude the Secretary from jointly preparing environmental assessments and land use plans with the States or other Federal agencies. Where such actions involve Federal minerals on lands under the jurisdiction of the Department of the Interior, however, the Secretary must assume full responsibility for ensuring compliance with Section 102(2)(c) of the National Environmental Policy Act of 1969, Section 202 of the Federal Land Policy and Management Act of 1976, and other Federal laws related to environmental assessment or land use planning functions under the jurisdiction of the Department of Interior. The Office has, therefore, elected not to accept the commenter's suggested revision. Instead, the Office has made a minor modification to paragraph (c) to explicitly indicate that the Secretary only retains authority for development of land use plans for Federal lands.

Contrary to the comment that there is no statutory authority for the Secretary to approve significant modifications to approved mining plans as provided in Section 745.13(i), Section 523(c) of the Act specifies that the Secretary cannot delegate authority to approve mining plans. The Office believes that Congress' intent to prohibit such delegation also extends to significant modifications of mining plans. The Office believes that significant modifications to mining plans could cause impacts of great or greater magnitude than those of the original plan. The Office believes that the Congress did not intend to overlook such possibilities when setting forth the purposes of the Act in Section 102. Paragraphs (a) through (f) of Section 102 specifically provide for protection of society and the environment against adverse effects of surface coal mining operations. The Office, has, therefore, elected to retain the provisions of Section 745.13(i).

Finally, the Office does not believe that the provisions of Section 745.13(k) ignore the right of a State to regulate its end use of private surface or preclude the imposition of more stringent State statutes. The provisions of this paragraph only apply to Federal lands. Where such interest involve only Federal minerals, end use of land surface must be in accord with State land use policies and procedures as required by the Federal Coal Leasing Amendments Act. Further, Section 505(a) and (b) of the Act provide for the application and enforcement of existing, more stringent State laws. Nothing in Section 745.13(k) of the proposed rules should be construed to conflict with such authority. For these reasons, the Office has elected not to adopt the commenter's alternative to delete this and other paragraphs of this Section.

§ 745.15 Termination.

1. Section 745.16(b) of the proposed rules (745.15(a) as renumbered) sets forth provisions for terminating State-Federal cooperative agreements by the Secretary. The purpose is to afford the affected State and the interested public an opportunity for involvement and input into the termination proceedings.

2. Commenters allege that the proposed rules do not provide adequate opportunity for public involvement in the termination proceedings. This, the commenters believe, is contrary to the intent of the Act, which emphasizes citizen participation. They contend this Section should be expanded to ensure public involvement in termination actions.

Review of the proposed rules and Section 523(c) of the Act indicate that both are silent regarding public participation in negotiating or terminating State-Federal cooperative agreements. Article IX of the existing cooperative agreements, however, provides detailed and comprehensive procedures for public participation in termination proceedings. These and subsequent State-Federal cooperative agreements will be approved through the rulemaking process which will afford all interested individuals an opportunity to review and comment on the Article IX requirements. The Office, therefore, has elected not to duplicate such requirements in the final rules. Instead, in order to provide a measure of consistency with the public involvement opportunities for entering into cooperative agreements, the Office has elected to modify Section 745.15(b) of the final rules to incorporate, by reference, the opportunity for a public hearing and comment period required in accordance with Article IX of the existing State-Federal cooperative agreements.

3. Section 745.16(b)(2) of the proposed rules (745.15(b)(2) as renumbered) specifies that the Secretary may terminate a cooperative agreement if the State regulatory authority has failed to comply with the assurances given by the State. One commenter suggested that the term "assurances" implies or could infer important agreements made in secret. The commenter further contends that any assurance which is important enough to require termination should be incorporated into the cooperative agreement and be subject to public scrutiny.

The "assurances" referred to in Section 745.16(b)(2) of the proposed rules are a series of affirmations contained in the various Articles of the cooperative agreements. These agreements will be approved through the rulemaking process, permitting public review and comment on the included affirmations. The Office, by use of the term "assurances," did not intend to conceal important information or agreement terms. However, to avoid misunderstanding the Office has elected to substitute the term "undertakings" for "assurances."

§ 745.18 State Actions Under Agreements.

1. Section 745.18 of the proposed rules established procedures to be followed by the State regulatory authority in the administration of State-Federal cooperative agreements. The intent was to notify the States and the public of requirements relating to application fees, copies required, and civil penalties.

2. Several commenters indicated that the provisions of Section 745.18(a)(1) of the proposed rules do not permit flexibility in setting permit fees. Similar concerns were expressed for these same provisions in Section 741.11(b)(2), as discussed in the preamble to Part 741.

Other comments on proposed Section 745.18 contend that a State should be allowed to retain permit fees without a corresponding reduction in the Federal grant for administration of a cooperative agreement. One commenter suggests that collected fees should be forwarded to OSM to eliminate any requirement to adjust the amount of the Federal grant.

A final comment on Section 745.18 of the proposed rules recommends the number of copies of permit applications required under Section 745.18(b) be reduced. The commenter suggested that requiring seven (7) copies of each application be submitted to the Regional Director is unreasonable and will result in burdensome paperwork. The commenter recommends that States be relieved of the paperwork and cost burden by requiring only one copy of the permit application.

The Office has reviewed all the provisions of proposed Section 745.18 and has determined that the requirements of this Section duplicate or can be incorporated into the provisions of Sections 741.12, Permit Applications, or 743.13(c), Civil Penalties. Permit fees, for example, are discussed in Section 741.12(a) Similarly, the number of copies of permit applications required is considered in Paragraph (b) of this same section.

Also, commenters' concerns regarding flexibility in establishing filing fees have been considered and incorporated in the review and revision of Section 741.12(a). For further discussion, the reader's attention is referred to the discussion on permit fees, under Section 741.12(a) of the Part 741 preamble.

Finally, regarding comments on the proposed Section 745.18 rules concerning disposition and handling of permit fees, the Office considered three alternatives to the proposed rules. The first would allow States to either retain the fee or forward it to the Secretary. This alternative would differ from the proposed rules by adding a provision to allow States to forward collected fees to the Secretary. It would not materially alter the procedure for accounting for fees through reporting procedures of Section 745.18(a)(2). It would also provide the opportunity for States to avoid having to adjust the amount of eligibility for a grant under Section 705 (c) of the Act.

A second alternative would permit States to retain the fee without the obligation to reduce the amount of the Federal grant. This option would reduce the reporting burden on the States. It would, however, result in double compensation to the States because funding would be available from both fees and Federal grants. This alternative was, therefore, determined unacceptable.

A third alternative considered would require deleting Section 745.18(a) and adding a new Paragraph (f) to Section 745.12, requiring that the amount of fee, procedures for collection, and reporting permit application fees for Federal lands be set forth in the cooperative agreement. Adoption of this alternative would also allow the flexibility to deal with fee accounting on a State by State basis to meet individual needs. For these reasons and those discussed previously, the Office has elected to adopt this alternative. Section 745.12, Terms, has been revised accordingly.

3. Finally, comments suggesting a reduction in the number of copies of a permit application under proposed Section 745.18(b) were not adopted by the Office. Under an agreement, the State will have the authority to set its own requirements relating to copies of permit applications. Further, the requirement for seven (7) copies for the Regional Director applies only to surface coal mining and reclamation operations on Federal lands and not to all lands, as inferred by one commenter. This number of copies is essential to provide sufficient review copies for the public and the various Federal offices agencies having jurisdictional responsibilities over the lands, resources, and activities involved in the operation.

For these reasons, the Office elected not to accept the commenters' suggestion to reduce copy requirements. As previously indicated, however, proposed Section 745.18(b) has been eliminated, since its requirements are redundant with the provisions of Section 741.12(b).

SUBCHAPTER F—AREAS UNSUITABLE FOR MINING

Section 522 of the Act establishes a procedure to designate areas unsuitable for all or certain types of coal mining, thereby enabling the State and Federal governments to respond to conflicts which often arise between coal mining and other uses of the land. Additionally, it provides procedures for implementing Congressional designations under Section 522(e). This Subchapter implements the provisions of Section 522(a)(1) for establishing a State planning process, of Section 522(a)(2) for mandatory designations when reclamation is infeasible, Section 522(a)(3) for discretionary designations according to the criteria in Section 522(a)(3) (A)-(D), 522(a)(4) for required elements of a State process, Section 522(a)(5) for coordinated implementation, Section 522(a)(6) for exemptions, Section 522(c) for the petition process, Section 522(d) for economic, environmental and resource impact statements, and Section 522(e) for Congressionally imposed limitations and prohibitions on mining. It also implements the petition process on Federal lands and the designation process for a Federal program within a State.

Lands covered by the petition process are all private and State-owned lands within a State and all Federal lands as defined in the Act. Additionally, for Federal lands, the Act provides for a Federal coal lands review which is a review process for unsuitability for Federal lands in addition to the petition process. Regulations concerning the Federal coal lands review procedures and unsuitability criteria are not included here. The Bureau of Land Management is responsible for implementation of the Federal coal lands review on BLM lands. See example regulations in Draft Environmental Statement, Federal Coal Management Program, USDI, BLM December 15, 1978, pp. A-29 to A-32; see also 43 FR 57662, Dec. 8, 1978. Indian lands are not covered by these regulations. The petition process, the Federal coal lands review and the Congressional designations, except where specifically exempt, all apply to the surface effects of underground mining as well as surface mining.

Under the procedures for designation, citizens can petition the regulatory authority to designate certain areas unsuitable for all or certain types of surface or underground coal mining. Once the regulatory authority designates an area unsuitable for mining, permits cannot be issued for that area. Additionally, there are procedures for citizens to petition the regulatory authority to terminate a designation of unsuitability for mining. Once a petition to terminate a designation is granted, the regulatory authority may then issue permits for that area.

The regulatory authority must consider petitions which are received after a permit application has been filed. Once a permit has been issued, however, the regulatory authority cannot revoke a permit if a petitioner seeks to designate a permitted area.

The regulatory authority is required to respond to two types of petitions. If a petition alleges that reclamation is not technologically and economically feasible under the standards of the Act, these regulations or the laws and regulations pursuant to an approved State or Federal program, and the regulatory authority agrees, the regulatory authority is then required to designate an area unsuitable for all or certain types of surface coal mining operations. If a petition seeks to designate certain fragile, historic, renewable resource or natural hazard lands unsuitable for all or certain types of surface coal mining operations, the regulatory authority has discretion to designate an area unsuitable if it finds that surface mining operations would: Be incompatible with existing State or local land use plans or programs; or cause significant damage to important cultural, scientific, and esthetic values and natural systems; or result in a substantial loss or reduction of long range food or fiber productivity; or substantially endanger life and property in natural hazard areas, including areas subject to frequent flooding or unstable geology.

Unlike the permit application process, the designation process is to be applied on a natural area basis, rather than a specific mine or site-by-site basis. Congress determined that the area-by-area approach would benefit the coal industry because the industry can learn, in advance of permit application, those areas which are not open to mining or certain mining methods. Report of the House Committee on Interior and Insular Affairs, Surface Mining Control and Reclamation Act of 1977, H.R. 95-218, p. 95.

The regulations of this Subchapter are divided as follows:

1. Part 760 explains the general requirements for State programs, Federal programs within States, the petition process and areas where the Act prohibits or limits surface coal mining operations under certain conditions. Authority for this Part is found in Sections 102, 201, 501(b), 503, 504, 505, 510, 517(f), 522 and 523 of the Act.

2. Part 761 establishes procedures for determining whether a proposed surface coal mining operation is prohibited or limited by the requirements of Section 522(e) of the Act. It also contains definitions and procedures to be used in determining whether a pro-

posed surface coal mining operation is exempt from these prohibitions or limitations. Authority for this Part is found in Sections 102, 201, 501(b), 503, 504, 510, 512, 513, 514, 522 and 701 of the Act.

3. Part 762 contains the criteria for determining whether an area on either non-Indian, non-Federal or Federal lands is unsuitable for all or certain types of surface mining operations. Authority for this Part is found in Sections 102, 201, 501(b), 503, 504, 510, 512 and 522 of the Act.

4. Part 764 sets forth the minimum requirements for a State petition process to designate areas unsuitable for all or certain types of surface coal mining operations or to terminate such designations. Authority for this Part is found in Sections 102, 201, 503, 510 and 522 of the Act.

5. Part 765 provides the minimum requirements of a Federal program for a State to designate areas unsuitable for all or certain types of surface coal mining operations. Authority for this Part is found in Sections 102, 201, 501, 503, 504, 510, 512, 514, 517 and 522 of the Act.

6. Part 769 contains the process for petitioning to designate Federal lands unsuitable for all or certain types of surface mining operations and to terminate such designations. Authority for this Part is found in Sections 102, 201, 510, 517, 522 and 523 of the Act.

Below, section by section, the comments received by OSM concerning Subchapter F are summarized and answered. Some sections are not mentioned because no significant comments were received on them. Some changes are not reflected in the discussion of the comments; these are typographical, editorial and grammatical corrections which are not intended to change the meaning of the regulations, only to correct or clarify them. The comments are organized in numerical order by section number, with the comments covering an entire section mentioned at the beginning of each section.

PART 760—GENERAL

Section 760.4(b) states the responsibility of a State, first, to establish a process that includes a data base and inventory system for designating lands unsuitable and, second, to make it available to the public. Some commenters objected to having this information made available to the public. OSM has rejected these comments because this information is to be gathered, in part, with Federal funds, at public expense, and OSM therefore believes that the information should be made available to the public. Such information in the data bases also is of value to citizens in determining whether to file petitions and what information to include in them.

PART 761—AREAS DESIGNATED BY ACT OF CONGRESS

Section 761.5 contains definitions of terms and phrases of special importance for areas designated by Congress in Section 522(e) of the Act. OSM received comments on most of the definitions.

No significant recreational, timber, economic or other values incompatible with surface coal mining operations: A number of commenters offered alternatives for this phrase. Other commenters suggested deleting the word "economic" from the list of values to be defined. Because the term "economic" is part of the statutory language in Section 522(e)(2), OSM has not deleted economic considerations from the definition. Several commenters objected to the words "appreciable" and "measureable" in the definition. OSM agrees that these words lack the precision necessary for the regulations and they are not included in the final definition. Many commenters suggested deleting the words "disturbed" and "hampered". OSM has deleted these words from the final definition.

A commenter suggested that the definition include the phrase "Federal lands within the boundaries of any national forest included in the permit application." This phrase is taken from Section 522(e)(2), but does not modify "no significant recreational, timber. . . ." OSM has rejected this addition because the phrase would be redundant and would confuse, rather than clarify, the definition. A number of commenters suggested adding "related" to the definition so that it would read "No significant recreational . . . or other related values. . . ." Because the words to be defined come directly from the statute, OSM does not believe that Congress intended to expand the language as suggested.

A commenter suggested deleting Subsections (b) and (c) of the definition and changing subsection (d) to read "scenic, archeologic, and historic interests which are recognized as part of the national heritage." The subsections are intended to define the specific values enumerated in the statute. If the commenter's suggestion were adopted, both "timber" would remain undefined, and the proposed subsection (d) would restrict the meaning of "other values" more narrowly than Congress intended. A suggestion to add the word "visual" to subsection (d) was made by a commenter. OSM believes visual values are adequately covered under the general rubric of "esthetic" and that the addition of "visual" is not necessary. Several commenters suggested that the word "significant" replace "appreciable, measurable, and noteworthy" in the definition. Since the word "significant" is part of the statutory language, OSM has written the final definition to give meaning to "significant."

A commenter expressed concern that there is no distinction made in the definition between planned or managed recreational areas and areas not specifically set aside for recreational use. The statute makes no such distinction; it speaks only of "recreational . . . values". OSM believes that the final definition reflects Congress' intent to protect recreational values. Several commenters suggested revising the definition to clarify how these various values would be determined to be incompatible with surface coal mining. They suggested deleting "esthetic" as a value to be considered in Subsection (d). Another commenter believed that this term is too subjective. However, the statutory language says, ". . . other values incompatible with surface mining operations." In Section 101(c), Congress stated its intent to protect natural beauty. Because Congress intended that esthetic values be considered in the overall regulation of surface coal mining, OSM has decided to retain esthetic values in the definition. OSM has revised the final definition, however, to clarify how these various values would be determined to be incompatible with surface coal mining. OSM's final language is designed to satisfy the commenters' concerns and provide clear guidance for implementing this provision of the Act.

Surface operations and impacts incident to an underground coal mine: A commenter suggested that the definition should be limited to subsidence and improperly related to all types of surface disturbances, because subsidence is the only surface disturbance probibited by Section 516 of the Act. OSM chose the proposed definition in order to provide comprehensive language that related to the definition of surface coal mining operations in Section 701(28) of the Act. Because that definition, in Subsection (B), relates to disturbances of the natural land surface and because sections 516(b)(9) and (11) also relate to surface disturbances other than subsidence, OSM believes that the final definition should cover all surface disturbances. Therefore, the proposed language has not been changed.

Significant Forest Cover: Citing the "Wildlife Planning Glossary" (PSW Forest and Range Experiment Station Technical Report PSW-13/1976), a commenter proposed that the definition contain the phrase "currently occupying the ground." OSM believes

that this phrase is surplusage and has rejected this change.

Occupied Dwelling: A commenter suggested adding the following sentence to the definition: "Mobile homes and trailer homes not permanently affixed to the land shall not be included within the definition of occupied dwelling." The commenter cited Section 102(b) of the Act which expresses Congress' intent to "assure that the rights of surface owners and other persons with a legal interest in the land or appurtenances thereto, are fully protected...." He stated that mobile homes are often not considered appurtenant to the land because of their moveable nature. OSM has rejected this suggestion because mobile homes are occupied dwellings in the usual sense of the word.

The accepted meaning of dwelling is a residence, an abode or habitation. Had Congress intended that only conventionally built houses be included in this case, they would not have used the word "dwelling". OSM believes that Congress intended to protect people in their homes, whatever type of homes they may be, including mobile homes.

Other commenters suggested exclusion of dwellings built after the permit application is filed. They were concerned about the possibility that dwellings may be built after the permit application is filed, thus possibly preventing mining. OSM recognizes that in rare instances the prohibition against mining within 300 feet of an occupied dwelling may prevent an operator from mining all the way to the edge of his or her permit when someone builds a house close to the permit boundary. An operator would be well-advised to obtain a waiver from a potential owner before beginning to mine. Under the definition of valid existing rights (VER), an operator cannot claim VER for a right which he or she acquired after August 3, 1977. After August 3, 1977, an operator must either obtain a waiver or plan to mine within a distance of the permit boundary adequate to ensure that there will be no mining within 300 feet of any new dwelling.

A few commenters suggested that the word "temporary" broadens the definition beyond Congressional intent. A commenter also stated that, if it is the intent of the definition to protect irregularly used vacation homes, then it should explicitly do so. Section 522(e)(5) is designed to protect people as well as property from the effects of surface mining near their dwellings. While the protection of the rights of property owners with interest in the land and its appurtenances is part of the overriding intent of Congress, Section 522(e)(5) specifically addresses the question of dwellings, making no distinction between permanent homes or homes affixed to the land; it says "any occupied dwelling." OSM believes that Congress intended "occupied dwelling" to include both full-time and part-time occupancy. The usual definition of dwelling includes residence for a time as well as permanent residence. Therefore, the final definition retains the term "temporary."

A commenter suggested that provision be made for waiving the prohibition against mining within 300 feet of an occupied dwelling when the owner of the occupied dwelling is also the permittee. This is not necessary because OSM does not intend a permit applicant to have to execute a waiver to himself or herself. When the owner of the occupied dwelling is also the permit applicant, no waiver is required.

Public building: Some commenters believed that the proposed definition was too broad, contrary to normal usage and included private dwellings. They suggested deleting "meetings or other group gathering" to narrow the scope of the definition, so that it would only include buildings used for public business. OSM has decided to insert the word "principally" to avoid prohibiting mining near buildings with only occasional use. Another commenter suggested adding a provision allowing the owner of a public building to waive the prohibition from mining within 300 feet, to parallel the waiver for mining within 300 feet of any occupied dwelling. Because the Act does not provide for such a waiver, OSM has not adopted this suggestion.

Community or institutional building: Some commenters believed that this definition was too expansive and would include private structures used for meetings or gatherings of community groups or the public, however infrequent. They suggested revising the definition to include the word "primarily" to qualify the use of the building. OSM has accepted this suggestion.

Public park: Several commenters suggested deleting the word "adopted" as it seemed unclear, unfamiliar in the context of parks and possibly redundant. OSM agrees and has deleted the term. Deletion of the phrase "by any Federal, state or local agency" was suggested in order to encourage, and indeed provide for, privately owned land that is dedicated to park use while other commenters suggested deletion of the phrase "held open to the public" in order to eliminate ambiguity and restrict the coverage of the definition. The Office believes that those lands which are owned by nonprofit organizations whose primary purpose is the protection of natural resources, and which are open to the public, should be protected as provided in this Section since they are dedicated for public purposes. This protection is particularly important as such forms of ownership are increasingly common ways of protecting these resources, especially as available government funds become limited. OSM has rejected these suggestions because deletion of these phrases would result in more ambiguity. OSM believes that privately owned land which is held open to the public is not excluded from the final definition.

Public Road: Some commenters believed that the proposed definition is too broad and should be narrowed to include only vehicular travel on roadways owned or maintained by a Federal, State, or local agency. The threshold, they believed, for public road should be ownership and maintenance by a public agency. OSM believes that no reference should be made to ownership or maintenance by a public agency since it could exclude roads used by the public over an extended period of time, regardless of how they are maintained. Congress' intent was to prevent mining from interfering with the access of the public to any thoroughfare that was, and is frequently traveled by the public. Consequently, OSM had deleted any reference to ownership and maintenance of a road by a public agency from the final definition.

Cemetery: A commenter suggested that, unless the proposed definition covers certain elements, such as the size of the area and the location of the bodies, then it is not justified and should be deleted in favor of a broad, universally accepted definition. OSM has retained this definition unchanged in order to specify what areas can be considered cemeteries. The use of the term "interred" indicates that a cemetery is where bodies are intentionally buried.

Valid existing rights: OSM received numerous comments on this definition. This provision exempts an operator from the prohibitions and limitations of Section 522(e), but the phrase "valid existing rights" (VER) is not defined in the Act.

First, OSM decided that the VER phrase must be distinguished from the definition of substantial legal and financial commitments. See 30 CFR 762.5. The latter exemption applies to the petition process under Section 522(a), whereas VER applies to the Congressional prohibitions of mining under Section 522(e). This distinction suggests that, in order for property owners to qualify for VER and thereby mine in the prohibited areas of Section 522(e), they must have a property interest in the mine that is even greater than the substantial legal and financial commitments needed to mine despite a designation by petition under

Section 522(a). Thus, OSM believes that VER must be more than "significant investments, that have been made on the basis of a long-term coal contract, in powerplants, railroads, coal preparation, extraction, handling and storage facilities, and other capital intensive activities," as substantial legal and financial commitments is defined in Section 762.5.

Second, the legislative history of the Act indicates that Congress wanted to avoid any taking in the implementation of Section 522(e) (Congressional Record, April 20, 1977, H-3827). There Congessman Udall opposed an amendment to delete the VER clause from the Act. He stated that if VER were deleted, the Act would not preserve valid legal rights which could not be done without "paying compensation under the Fifth Amendment to the Constitution." Thus, OSM has endeavored to determine the point at which payment would be required because a taking had occured, then to define "valid existing rights" in those terms, i.e., those rights which cannot be affected without paying compensation.

The legislative history of VER also relies on *United States* v. *Polino*, 133 F. Supp.. 722 (1955). That case concerned proposed mining of privately-owned coal within a National Forest. The court held that Polino's right to mine depended on whether the deed conveying the coal to him specifically granted the right of extraction by surface mining. The court decided that, unless the deed or lease "expressly grants stripping rights," the coal could only be mined by deep mining so as not to disturb the surface. The Polino decision does not relate directly to whether there might be a taking for which compensation must be paid. Rather, it relates to the nature of the right being conveyed between private parties and the method of interpreting the document which conveys that right; and the final definition of VER therefore incorporates these concepts.

Third, in determing how to define VER, OSM has researched case law on takings. These cases can be divided into at least two categories which may be applicable to the definition of VER: (1) diminution of value and (2) noxious use. Both theories were recently analyzed by the Supreme Court in *Penn Central Transportation Co.* v. *New York City*, 438 US 104 (1978). As this case illustrates, the two theories are interrelated; there the Supreme Court analyzed both the extent to which the value of the property would be diminished and the harm that would result from the proposed use of the property.

The diminution of value theory has two elements: the amount of value that the property owner has given and the loss that the property owner will sustain. Under this theory, loss of value alone is not sufficient to establish a taking; a taking will be said to occur only if there is no reasonable remaining use for the property; *i.e.*, if the Government's action would deprive the property owner of "all reasonable beneficial use of the property." 438 US at —. It is not enough to show that the owner has been deprived only of the property's most profitable use.

In analyzing the value of the property, the courts have distinguished an owner's value in an ongoing operation which must be halted, as compared with value that an owner has paid for some future operation that will be restricted. The taking cases reflect less sympathy for property owners who are denied some future opportunity to exploit their property interests based on prior beliefs that the property would be available for development; but most courts express concern over government interference with an ongoing operation which causes a 100 percent diminution in value unless it is a harmful use and falls within the noxious use category. This distinction suggests that VER could be defined differently for owners of coal which is essential to continue an ongoing mine, as compared to property rights in coal for a potential new mine.

The concept of reasonable remaining use suggests another distinction between situations where a property owner holds both the coal and surface, as compared to someone who owns only the coal. In the former case, the property owner would probably be said to have some reasonable remaining use for the surface; whereas in the latter case, someone who owns just the coal might be said to have lost all reasonable remaining use if the coal cannot be developed.

The noxious use theory applies chiefly in situations where government invokes its police power to prevent some harmful use of the property. This theory encompasses not only actions that are blameworthy, morally wrong or conscious risk-taking, but also other uses that may be harmful to the public. In such situations, the courts have upheld government interference with property use even if the loss of value is 100 percent. This theory is combined with diminution of value when courts decide what amount of interference with the use of property will be allowed on the basis of the degree of harm that may be caused.

Where government regulations are designed to promote public health and safety or some other substantial public purpose, they have been upheld by the courts even if they destroy or otherwise adversely affect property interests. E.g., *Goldblatt* v. *City of Hempstead*, 369 U.S. 590 (1962); *Nectow* v. *City of Cambridge*, 277 U.S. 183 (1928); *Miller* v. *Schoene*, 276 U.S. 272 (1928). The test that is applied is whether the regulations are reasonably related to implementation of a policy that is expected to produce a widespread public benefit and whether the regulations are equally applicable to all similarly situated property. Thus, in *Penn Central*, the Supreme Court recognized that restrictions of property use would be upheld "when interference arises from some public program adjusting the benefits and burdens of economic life to promote the common good."

Thus, OSM has concluded that VER could be defined in a variety of ways and still avoid an unconstitutional taking. OSM recognizes, however, that in deciding the validity of this definition, the courts will focus on particular fact situations, including how much harm would be caused by the mining operation and whether the property owner still has some reasonable remaining use of the land.

The comments on VER raised a number of questions, which are discussed below, along with an explanation of how the final definition relates to these concerns.

Whether to retain the language in Subsection (c) concerning stay of permit? Commenters believed that this language was unnecessary because challenged permits could not be considered issued unless their issuance had been upheld in court. The final definition does not contain this language. OSM believes that it is not necessary because the final definition does not always require a permit in order to have VER.

Must documents conveying the mineral rights specify the method of mining or show that the parties contemplated surface mining? Some commenters claimed that any leases, deeds or contracts that an operator has obtained should not be required to specify a mining method in order to qualify as VER for surface coal mining. They believed that the documents themselves convey a right to the mineral regardless of the method of recovery. OSM has rejected these suggestions because the legislative history concerning the *Polino* case requires that the document must be interpreted according to the usage and custom at the time and place where it came into existence. Under the final definition the applicant must show that the parties to the document actually contemplated a right to conduct the same underground or surface mining activities for which the applicant claims VER.

Whether valid existing rights applies to underground mining? A few commenters were concerned that the definition of VER would apply only to surface coal mining and that additional or other rights would have to be ob-

tained for separate underground operations. Under the final definition, a permit applicant may claim VER for underground mining.

Do prospecting permits have VER? As of this date, all Federal prospecting permits have now either expired or a preference right lease application is pending. Thus, VER is not an issue with respect to prospecting permits.

Are VER under the Act the same as under the Federal Coal Leasing Act Amendments or other Federal statutes? These commenters were concerned that all interpretations of VER be consistent. In the past, the term valid existing rights has been used in other Federal statutes where a change in law affects activities on Federal lands subject to valid existing rights. It appears however, that the prior case law which developed around the concept of VER does not apply to the Surface Mining Act because Section 522(e) affects both Federal and non-Federal lands and minierals; whereas, this prior case law applies to Federal leases and to homesteading and mining under the public land laws and the Mining Law of 1872. Under these statutes, Congress protected an individual's right to mine against destruction by withdrawal from private use; such rights were protected if a person had completed all except a few formalities that the law required to perfect a claim acquire a lease or receive a patent. But the case law concerning these statutes does not apply to situations of private coal ownership in a regulatory framework such as existing State law, other Federal environmental laws and the Surface Mining Act. This Act changed the context of VER significantly because it makes clear that surface coal mining on any private or Federal land is not an absolute right, but is subject to approval after a regulatory authority has determined that reclamation to the standards of the Act can be achieved. Thus, at least as of enactment of the Act, landowners no longer have an unconditional right to mine. OSM therefore believes that the definition of VER should take into account both the new regulatory framework created by the Act and the fact that the Act applies VER to both private and Federal lands. The final definition of VER applies only to the prohibitions of Section 522(e), however, and does not alter prior interpretations of this phrase under other Federal statutes.

Must VER be determined on a case-by-case basis? Some commenters believed that, if VER are determined on a case-by-case basis, the designation process would be delayed and the regulatory authorities would have an undue burden. OSM believes, however, that VER is a site-specific concept which can be fairly applied only by taking into account the particular circumstances of each permit applicant. OSM considered not defining VER, which would leave questions concerning VER to be answered by the States, the Secretary and the courts at later times. Without a definition, however, many interpretations of VER would be made and no doubt challenged by both operators and citizens; and once valid existing rights determinations are challenged, the permitting process would be delayed. OSM has therefore concluded that VER should be defined in order to achieve a measure of consistency in interpreting this important exemption. Under the final definition, VER must be applied on a case-by-case basis, except that there should be no question about the presence of VER where an applicant had all permits for the area as of August 3, 1977.

Are VER created merely by acquiring surface or coal rights? A few commenters believed that surface or coal rights alone constitute VER. They cited the cost involved and claimed that just compensation must be provided for all lands for which such rights have been acquired. Under the final definition, VER are not created by acquiring the coal rights alone. In order to have VER, a permit applicant must own the rights to the coal and must have all permits or the coal must be both necessary to maintain an ongoing operation permitted before August 3, 1977, and adjacent to that ongoing operation.

Would requiring permits in order to have VER favor wildcatters? Some commenters were concerned that, by requiring all permits in order to have VER, mining without a permit would be encouraged. The final definition is not limited to requiring all permits and OSM sees no reason to believe that mining without a permit will be encouraged.

What would constitute VER for haul roads? Some commenters were concerned that haul roads utilized for resources other than coal could have VER for surface coal mining operations. Others were concerned that the VER definition for haul roads be consistent with OSM's letter of October 3, 1978, to West Virginia. OSM's analysis indicated that there are two situations in which VER might be established for haul roads. First, an applicant or operator could have a specific right to construct and use a haul road, established by a recorded right-of-way, recorded easement or permit for a coal haul road as of August 3, 1978. The second situation which could establish VER for a haul road is the actual existence of a road as of August 3, 1977, which is being or could be used for coal haulage, including haul roads used for timber, stone or other minerals. Their use for hauling is established. Existing mines or other operations are dependent upon them. Although such roads may have to be upgraded to comply with the standards of the Act, it would be less damaging to the environment to continue the use of such a road than to require that a completely new road be constructed. Commenters' concerns that non-coal haul roads would qualify for VER must be balanced with the environmental disturbance of establishing new roads because many problems associated with haul roads—noise, dust, vibration—will continue regardless of whether the road is used for coal haulage. If a new road must be established for coal hauling, it will be necessary to disrupt additional land, regrade the surface, build a road bed, establish drainage controls and other facilities necessary to a new road. In addition, the problems of noise, dust, vibration and air pollution will be brought to a new area not previously affected. Accordingly, OSM believes that it is less damaging to use existing roads, whether or not previously used for coal haulage, than to require construction of additional roads. Therefore, all roads in existence as of August 3, 1977, have valid existing rights.

Should VER be defined differently for Federal and private lands? Many commenters believed that the proposed dual definition was discrimnatory. They believed that the definition for VER on Federal lands should be the only one and that surface or mineral leases should be sufficient to constitute VER. Under the final definition, VER is not defined differently for Federal and private lands. The intent of the proposed definition was to distinguish between VER on Federal and privately owned lands in order to take into account possible discrepancies between old and new Federal leases because pre-1965 Federal leases do not include a condition subjecting them to future regulations. OSM also intended to protect occupied dwellings, parks, roads and cemeteries with a narrow construction of VER for these important areas. As many commenters pointed out, however, this dual definition was not really workable because it did not distinctly separate Federal lands from private lands; there are situations where proposed mining on Federal lands could come within 100 feet of a public road or cemetery, or within 300 feet of an occupied dwelling. The assumption behind the proposed definition was that there would be no cases where, for example, mining on Federal lands would be proposed within 300 feet of an occupied delling. Upon reflection, OSM believes that this assumption was erroneous and the final definition contains no distinction between Federal and private lands.

Is the right to explore contingent on having VER? A few commenters stressed that exploration rights should in no way be contingent on VER; they believed the definition should be specific and clear on this point. Under Section 522(a) of the Act, exploration is not prohibited on areas designated unsuitable for mining; however, such exploration is subject to the requirements of 30 CFR 762.14. This Section clearly states that exploration may be conducted on lands designated unsuitable for mining.

How would having all necessary permits be different from an existing operation? Some commenters complained that the proposed definition for VER on State lands would require that a mine be in operation in order to claim VER. As defined in the final definition, VER would be different from having an existing operation in situations, for example, where an operator had all permits but had not yet begun work at the mine.

Should the definition of VER focus on ownership of land and coal rights, rather than holding permits? A few commenters claimed that ownership of land and coal rights alone should constitute VER, and that the final definition should be rewritten to reflect this view. They believed that designation of lands for which such rights have been acquired would constitute a taking. The final definition requires an applicant to have both the rights to the coal as of August 3, 1977; and either all permits or the need for coal adjacent to an ongoing operation permitted prior to August 3, 1977; thus, it does focus on ownership of the coal, but holding all permits is an alternative to demonstrating a need for coal adjacent to an ongoing operation.

Would defining VER as having all necessary permits promote mining under less strict controls? Some commenters believed that, if VER were contingent on having all permits, then existing operations could proceed under less stringent controls and thus subvert the purposes of the Act. Under the Act, however, all mining, whether conducted under permits issued prior to or after August 3, 1977, must be conducted according to the standards of the initial regulatory program. Similarly, after a State program is approved or a Federal program is implemented for a State, all mining, regardless when permitted, must be conducted according to the standards of the permanent regulatory program. Thus, OSM believes that, under any definition of VER there will be no difference in the stringency of controls that apply to existing operations.

In summary, OSM's final definition of VER is designed to avoid a taking which must be compensated and to be consistent with the guidance of the legislative history on this issue. In an effort to make the VER exemption more specific, OSM has defined VER in terms of a valid property right created prior to August 3, 1977, plus either (1) all necessary permits as of August 3, 1977, or (2) the coal is both necessary for, and adjacent to, an ongoing operation which was permitted prior to August 3, 1977. OSM also considered other concepts which might be included in the VER definition. They were: (a) the permit application was submitted before August 3, 1977; (b) the coal is necessary to continue an ongoing operation first permitted before August 3, 1977, but that coal might not necessarily be adjacent to the ongoing operation; (c) the coal is covered by a permit renewal or revision for an operation first permitted before August 3, 1977; and (d) distinguished between persons who own just the coal seam, as compared to those who own both the coal and the surface, by adding to the definition a new clause (a)(3) which would exempt someone who owned the coal alone and not the surface. OSM has rejected all of these alternatives because they would make the VER exemption overly broad and would not sufficiently protect the important areas set aside by Congress in Section 522(e). Item (c) would also be difficult to enforce; and item (d) has been rejected because it would greatly expand the definition and would exempt too many potential new mines from the prohibitions of Section 522(e). For haul roads, OSM has defined VER to include clearly established rights to construct a coal haul road and any other road in existence as of August 3, 1977.

Section 761.11 lists the areas where Congress has declared that mining is prohibited or limited. A commenter suggested that OSM add to that list a 1,000 foot buffer zone to prohibit mining near intermittent or perennial streams, rivers, lakes and reservoirs. OSM has not adopted this suggestion because Congress did not intend to impose a blanket prohibition on mining near bodies of water. Apparently Congress intended to protect streams through the permanent performance standards.

Section 761.11(c) concerns the prohibition on mining which would adversely affect any publicly owned park or any places included, or eligible for listing, in the National Register of Historic Places. The language of the regulation does not follow the Act verbatim because the Act incorrectly refers to historic "sites." The correct term from the National Historic Preservation Act (16 USC 470) is historic places and, as amended, that Act also applies to places eligible for inclusion in the National Register.

Many commenters suggested deleting the three determinations which paralleled Section 4(f) of the Highway Act. OSM has deleted these determinations to reduce the potential for confusing the Highway Act with the Surface Mining Act, and because they are appropriate to highways, but not parks or historic places. Thus, in cases where the regulatory authority determines that a proposed mining operation would adversely affect a publicly owned park or historic place, the agency with jurisdiction over that park or place would have to approve a permit for that operation. Mining could not proceed without such approval. The regulations concerning the prohibition of mining which would adversely affect publicly-owned parks or historic places are further discussed below in connection with 30 CFR 761.12(c).

Section 761.11(d) concerns the prohibition on mining within 100 feet of the outside right-of-way line of any public road, except where mine access roads or haulage roads join such right-of-way line. Four commenters suggested requiring operators to minimize haul road intersections. They wished to strengthen the protection of public roads. However, they ignored the fact that the language of the regulation is derived directly from Section 522(e)(4) of the Act. One commenter suggested that the regulation be revised to make clear that the 100-foot limit is measured horizontally, so that underground mining below a public road is not prohibited. OSM has accepted this suggestion because it believes that mining under a road should not be prohibited where it would be safe to do so.

Section 761.11(g) prohibits mining within 100 feet measured horizontally from a cemetery. Commenters suggested allowing mining within 100 feet of a cemetery if a waiver is obtained. The commenters believed that, if waivers are permitted for owners of private dwellings, this right should be extended to owners of cemeteries. Other commenters suggested that mining be allowed within 100 feet of a cemetery if it is relocated with the owner's consent. These commenters were concerned that the presence of cemeteries would prohibit mining. Nothing in the Act prohibits relocation of cemeteries under existing procedures under State law, before an operator applies for a permit. OSM believes that a waiver for mining within 100 feet of a cemetery is not authorized by the Act because the prohibition against mining within 100 feet of a cemetery comes directly from Section 522(c)(5) of the Act. Congress has only permitted waivers for occupied dwellings and chose not to allow them for cemeteries.

Sections 761.12 (b) and (c) require the regulatory authority to reject permit applications for areas where mining is prohibited or limited under Section 522(e). Where there are boundary questions, the regulatory authority must send a copy of the relevant portions of the permit application to the appropriate agency for a boundary determination or clarification. When Federal lands are involved, the Director will make the boundary determination. Commenters suggested that there be a time limit on the Director's determinations after which the permit would be issued automatically if no determination had been made. OSM believes that legally there cannot be a time limit on a boundary question which relates to an area where mining would be prohibited. Other commenters suggested that there should be public participation in the Director's boundary determinations. OSM believes that there is no need for public participation in these determinations because this process is a ministerial function of simply checking legal boundary descriptions. Other commenters suggested that the language be revised to clarify that these procedures apply only if the regulatory authority is unable to determine the applicable boundaries. This suggested clarification has been accepted.

Section 761.12(d) concerns procedures to be followed by the regulatory authority where mining within 100 feet of the outside right-of-way of any public road is proposed. Commenters suggested that OSM delete the requirement that the applicant obtain approval of the authority with jurisdiction over the public road. OSM has not accepted this suggestion because OSM believes that it is proper for the public road authority to approve any proposed relocations.

Other commenters suggested that the public hearing required by the Act be held by the public road agency, not the State regulatory authority. The State regulatory authority has an obligation to provide an opportunity for a public hearing under the Act. That hearing need only to be informal and fact-finding in nature, however, and it may be possible for the State regulatory authority to utilize the public road agency to conduct the required hearing or to conduct a hearing jointly with the public road agency. These opportunities for cost-saving measures are not precluded by the final regulation. The term fact-finding has been deleted from the final regulation in order to avoid any suggestion that the hearing would have to be adversary or adjudicatory in nature. See *U.S.* v. *Allegheny Ludlum-Steel*, 406 U.S. 742 (1972); and *U.S.* v. *Florida East Coast Railway*, 410 U.S. 224 (1973).

Other commenters suggested that OSM increase the time for preparation of a written finding, based upon information received at the public hearing, from 10 days to 30 days. They pointed out that 10 days may be insufficient time to complete the analysis of the public hearing material and prepare a written finding. OSM agrees with this suggestion and has therefore lengthened the time period to 30 days.

Section 761.12(e) provides that, where mining is proposed within 300 feet of any occupied dwelling, the permit applicant must submit a waiver from the owner. Several commenters suggested that the waiver should only come from the owner and not the occupants, as was proposed. OSM has accepted this suggestion because it follows the literal language of the Act. The proposed regulations required revealing to the State regulatory authority all consideration given for the waiver and required the waiver to be separate from a lease or deed. OSM has deleted the requirement to reveal all consideration given for the waiver because OSM believes that consideration given for the waiver is not useful in determining consent. The final regulation retains, however, the requirement for a separate waiver but an exception has been inserted for situations where the waiver is explicitly set forth in the lease or deed. In this manner, the regulation ensures that the owner knowingly granted the waiver.

Section 761.12(f) concerns procedures to be followed where a proposed mining operation might adversely affect a publicly owned park or historic place. Other related comments are discussed above in connection with Section 761.11(c). Some commenters suggested defining "adversely affect." OSM has not defined "adversely affect" because similar or identical terms are used throughout the regulations without definition.

OSM also has not defined the statutory phrase "jurisdiction over" in these regulations. There is no legislative history to indicate how Congress intended this term to be interpreted, nor is there any guidance in the legislative history concerning who should make the adversely affect determination. OSM has decided that this determination should be made by the regulatory authorities. Having more than one party make this determination could result in constant disagreement among agencies.

OSM interprets the Act as conferring authority on the Advisory Council and other Federal, State and local agencies which have advisory or regulatory responsibilities with respect to parks and historic places to approve all mining which would adversely affect those public parks or historic places. Thus, the language of the final regulation has been changed to reflect this interpretation by adding "or a statutory or regulatory responsibility" to clarify "jurisdiction over." Such agencies include those that must be consulted or give their advice or approval regarding any actions that would affect a park or historic place. Parks and historic places will receive additional environmental protection through application of these agencies' expertise in evaluating situations where mining could produce adverse effects. Without this interpretation, many parks and historic places would be vulnerable to damage from surface coal mining operations.

In cases where the regulatory authority determines that a proposed mining operation would adversely affect a publicly owned park or historic place, the agency with jurisdiction over that park or place would have to approve a permit for that operation. Mining could not proceed without such approval. The determination regarding whether or not coal mining would adversely affect a publicly owned park will be made by the regulatory authorities during the permit evaluation process. This provision also implements OSM's decision to pass through to the States the various responsibilities for protecting historic places under the National Historic Preservation Act. In order to conform the designation regulations to the permit regulations (Subchapter G), OSM has chosen to pass through to the States all responsibilities under the National Historic Preservation Act.

Section 761.12(g) provides, if the State regulatory authority determines that the proposed mining operation is not prohibited under Section 522(e) of the Act and regulations, it may still consider a designation of unsuitability through the petition process. Commenters suggested deleting this Section because they maintained that the States have no authority to initiate the petition process on non-Federal lands or lands outside the prohibitions of Section 522(e). They believed that the petition process is limited to citizens. OSM has included this provision in order to clarify the relationship between the prohibitions of Section 522(e) and the petition process. State agencies are included in the definition of "person" under Section 700.5 and, as persons, can initiate a petition on their own where they believe that an area is unsuitable for mining even though it it not covered by the prohibitions of Section 522(e). To clarify that States may only designate an area unsuitable pursuant to a petition, OSM has added "pursuant to appro-

priate petitions" to the final regulation.

PART 762—CRITERIA FOR DESIGNATING AREAS AS UNSUITABLE FOR SURFACE COAL MINING OPERATIONS

Section 762.4 explains that the criteria in Part 762 are to be used by the State regulatory authorities to determine unsuitability. Commenters suggested that the Section include a statement that the State regulatory authorities have a duty to act on petitions. This responsibility is already stated in Section 764.4(b) which specifies that States have the responsibility to develop procedures to designate lands unsuitable for mining consistent with Part 764 which requires State regulatory authorities to respond to petitions. Other comments suggested that this part be revised to provide for a role of the Forest Service in determining the best use of Forest Service lands. Under the Department of Interior's division of responsibilities and functions, OSM would handle the petition process for Federal lands, while the Bureau of Land Management would handle the Federal coal lands review process. OSM is now working out memoranda of understanding among the Interior surface managing agencies and will follow a similar course with other agencies including the Forest Service.

Section 762.5 sets forth the definitions of terms contained in the designation criteria.

Fragile lands: It is important to note that this definition does not attempt to imply any degree of significance for those lands defined as "fragile." The determination of significance is left to the decision on the petition itself. Also, the listing of examples of lands that may fall within the definition of fragile lands is not meant to be all inclusive. Many commenters suggested that the definition was too broad and provided many suggestions for rewording it. Most focused on adding qualifiers to the definition that would limit its scope. The commenters often confused the criterion by which the regulatory authority determines whether an area should be designated unsuitable with the definition of fragile lands. OSM believes that the qualifiers already in the criterion of Section 762.11(b)(2), *e.g.*, "significant" and "important", are sufficient to ensure that areas lacking important values or natural systems are not designated unsuitable. The definition is meant to provide guidance on what general types of resources can be considered fragile lands, not a list of areas which can or should automatically be designated unsuitable.

Many commenters suggested removing buffer zones adjacent to the boundaries of areas where surface coal mining operations are prohibited under Section 522(e) of the Act from the examples of fragile lands. They generally indicated that the mere fact that an area serves as a buffer zone does not mean that it is fragile. By providing for buffer zones, OSM is ensuring that areas around national parks and other Section 522(e) areas not be overlooked as fragile lands. As noted above, including these areas as examples does not mean that they would automatically be designated unsuitable. Some commenters suggested deleting the definition entirely. OSM believes, however, that deleting the definition would not provide the guidance to the regulatory authorities, industry or the general public which is necessary for identifying possible fragile areas.

Adding National Natural Landmarks to the definition of fragile lands was suggested. These landmarks receive the same kind of protection as historic places, but they are listed on a different register. They include geologic formations and certain ecosystem types which logically constitute fragile lands and are not covered in Section 522(e)(3) which only relates to National Historic Places. OSM has accepted this suggestion.

Renewable Resource Lands: This definition has been moved to 30 CFR 700.5 and is discussed in the preamble concerning that section.

Historic Lands: Some commenters suggested adding the adjective "important" to modify historic or cultural districts. Commenters who asked that "important" or other qualifying words be added to the definition were suggesting that a test of importance or significance be added without providing any means of determining that significance or importance. OSM has rejected these comments because adding this qualifier would permit State regulatory authorities to disregard petitions without a hearing and compiling a record, by deciding that the area was not important or significant. The significance test is properly left to the actual decision on the petition using the criteria in the Act which are repeated verbatim in Section 762.11.

Some commenters believed that paleontological sites should be included under fragile lands. However, paleontological sites do not logically belong under fragile lands because they are more like archeological sites and, as such, are of historic importance. Other commenters apparently believed that sites having religious or cultural significance to Indian tribes are always on tribal lands and are already protected under different Sections of the Act or now belong to someone else and their disposition is no longer a matter for Indian concern. For these reasons, the commenters suggested deleting the reference to Indian sites. OSM has not accepted this suggestion because the significance of Indian or cultural sites should determine their status, not their location on tribal lands.

Other commenters requested the addition of "without limitation" after the word "including." OSM has rejected this suggestion because it would not add anything meaningful to the language of the definition. A commenter suggested changing Indian tribes to Native American, ethnic or religious groups. OSM has accepted the Native American and religious groups, but rejected the suggestion to included places important to ethnic groups, believing that places important to ethnic groups are already covered. Another commenter suggested adding a provision that the definition of historic lands shall not be narrowly construed. Narrow or broard construction language does not add anything meaningful. Construction will occur at the time a petition is evaluated, and should be left to that evaluation. Therefore, OSM had not accepted this suggestion.

Some commenters suggested deleting sites eligible for listing in the National Register of Historic Places. OSM did not accept this suggestion because, as discussed in connection with Section 761.11(c), the National Historic Preservation Act of 1966, as amended, provides the same protection for places eligible for listing as for those places already on the National Register of Historic Places. In amending the National Historic Preservation Act, Congress intended that Federal agencies should implement this protection for eligible places. OSM has decided that, for the purposes of Subchapter F, a place is "eligible" at the time the notice of its eligibility is published in the FEDERAL REGISTER.

Natural Hazard Lands: Some commenters suggested that this entire definition be deleted. OSM believes that deleting the proposed definition and leaving only the language of Section 522(a)(3)(d) would not provide any guidance to State regulatory authorities concerning the types of lands that might be considered for designation as unsuitable for mining because of natural hazards. In OSM's view, the terms in the Act should be defined to achieve some uniformity in the application of this criterion.

Many commenters suggested rewording the definition to include a general statement defining a general category preceeding specific examples that provides an overview of the type of areas that should be designated as unsuitable and to provide a more logical ap-

proach to categorizing those lands. OSM has accepted this suggestion and has reworded the final definition to provide a general description of these lands preceding the specific examples.

This definition was developed to provide examples of natural hazard lands. As written, the definition does not necessarily mean that an area falling within the definition would be automatically considered unsuitable for surface coal mining operations. It is left to the discretion of the State regulatory authority to determine whether an area is unsuitable for surface mining because of natural hazards. A commenter suggested that an avalanche is a natural hazard and as such should be mentioned in the specific examples. OSM has accepted this suggestion because avalanches are serious natural hazards. Another commenter believed that subsidence is not a natural hazard and susceptibility to subsidence should not be a basis for designating lands unsuitable for mining. He further pointed out that the fact that subsidence may be involved in underground minimg is recognized and provided for in Section 516(b) of the Act. OSM believes that natural subsidence is a natural hazard which can be considered a "cave-in", as mentioned in the specific examples. Moreover, because subsidence which is attendant to underground mining is indeed provided for in the Act, OSM has deleted this term from the definition of natural hazard lands.

Sustantial Legal and Financial Commitments: OSM received more comments concerning this definition than any other issue in Subchapter F. OSM has considered three principal alternatives concerning this definition and several subalternatives. They were: First, leave the definition as written; second, do not attempt to define substantial legal and financial commitments and settle each issue on a case-by-case basis; and, third, revise the definition to reflect the legislative history by including an example of substantial legal and financial commitments and by deleting references to major investments, legally enforceable and cancellation penalties. OSM has decided on the third alternative. Each subalternative is discussed separately below.

In response to many comments, OSM has considered whether to include the costs of acquiring coal in place or the right to mine it as constituting a substantial legal and financial commitment by itself. The legislative history clearly indicates that mere ownership or acquisition costs of the coal alone or the right to mine it by itself do not constitute "substantial legal and financial commitments." Following is a quote from House Report 95-218, p. 95 (1977):

> The phrase *substantial legal and financial commitments* in the designation section and other provisions of the Act is intended to apply to situations where, on the basis of a long-term coal contract, investments have been made in power plants, railroads, coal handling and storage facilities and other capital-intensive activities. The Committee does not intend that mere ownership or acquisition costs of the coal itself or the right to mine it should constitute "substantial" legal and financial commitments."

Numerous commenters believed that the costs of acquiring the coal in place or the right to mine it should constitute "substantial legal and financial commitments." The rationales for their comments ranged from there is no basis in the Act or legislative history to preclude these costs, to the costs of acquisition of the coal and the right to mine it are often the most substantial legal and financial commitments made by the company. A commenter suggested inserting "alone" in order to make clear that these costs could be counted only if other costs have been incurred. This suggestion is based on the Committee Report language above. OSM has accepted this suggestion.

OSM has considered whether to define major investments and, if so, which types of investments to include in the definition. Alternatives considered were:

1. Redefining "major investment." The proposed definition inserted several provisions not covered in the legislative history and did not include the following example of "substantial legal and financial commitments" from H.R. 95-218, pp. 94-95: "An existing mine might not be one actually producing coal, because it was in a substantial stage of development prior to coal production. Thus the meaning of existing operations is extended to include operations for which there are "substantial legal and financial commitments'."

2. Revising the definition to delete any reference to major investments. Instead of using the example above, the drafters of the proposed regulation defined "substantial legal and financial commitments" through the use of the following terms which are not in the Act or legislative history: major investments of money, improvements and fixed equipment, legally enforceable, sales, and contracts which cannot be cancelled except upon payment of a substantial penalty. As a result of using the above five words and phrases, the proposed definition of substantial legal and financial commitments did not accurately reflect the legislative history. OSM has revised the final definition to reflect the legislative history by deleting the above words and phrases.

3. Revising the definition of major investment by retaining the provision relating to aggregate capital expenditures and deleting the provision on aggregate assets. Many commenters believed that a major investment should be determined by the size of the investment compared to the coal contract, not the size of the company making the investment. They therefore opposed the aspect of "major investment" based on aggregate assets, but not the portion relating to aggregate capital expenditures. OSM has deleted from the final definition both categories, however, because it appears that Congress intended to base substantial legal and financial commitments on the coal contract, not aggregate assets or capital expenditures. See quotation above from H.R. 95-218.

4. Revising the definition of major investment by establishing a minimum dollar amount or a fixed percentage of anticipated costs, so that anything over the established minimum would quality as substantial. Several commenters suggested that a minimum amount, such as 2 or 5 million dollars, be established to define substantial. One commenter suggested that expenditures of 10 percent or more of anticipated costs of the operations should be considered substantial. A basis for the 10 percent was not provided. OSM has determined that any fixed dollar amount or percentage would be arbitrary and might impose disproportionate burdens on smaller companies.

OSM has also considered whether to extend the January 4, 1977, date for exemption to January 4, 1978. Section 522(a)(6) specifies the cut-off as of January 4, 1977. One commenter suggested that the January 4, 1977 date for exemption be changed to January 4, 1978, because the 1977 date is prior to the passage of the Act and because this commenter believed that Congress did not set forth retroactive provisions in the Act. In OSM's view, the January 4, 1977 date is firmly established in the Act, however, and cannot be changed by regulation. Further, Congress explicitly intended to apply many other provisions of the Act to already existing operations.

A commenter suggested that the definition be revised to explain that substantial legal and financial commitments do not apply to exchanges of private fee coal under Section 510(b)(5). OSM has considered whether to specify that this definition of substantial legal and financial commitments is not the same as substantial financial and legal commitments in Section 510(b)(5). House Report No. 95-218 (quoted above) may suggest that the two phrases have the same meaning; however, the definition in these regulations relates only to Section 522 and Subchapter F.

Another commenter suggested that draglines be included as substantial. Because purchase of a dragline is a capital-intensive activity, it qualifies as a component of a substantial legal and financial commitment. A commenter suggested that exploration costs should be considered substantial. Exploration costs are incurred before there is an existing mine and therefore cannot qualify as a substantial commitment by themselves, but only as part of the overall costs and commitments to mine. Another commenter suggested that advance royalties should be considered substantial. Advance royalties alone cannot be considered substantial commitments, but only as part of overall costs of establishing the mine.

Section 762.11 lists criteria for designations of unsuitability. A commenter suggested that States only be required to adopt the mandatory criterion of Section 522(a)(2) and not the discretionary criteria of Section 522(a)(3). The parallel construction in the Act for both types of criteria suggests, however, that both the mandatory criterion (technological and economic infeasibility of reclamation) and the discretionary criteria must be used by the State regulatory authorities in evaluating petitions. Moreover, all of these criteria must be adopted by a State in order to have an approvable State program under Section 503 of the Act.

Some commenters suggested providing some specific guidance or thresholds for State regulatory authorities to apply in determining whether the discretionary criteria have been met. OSM has considered both revising the regulations to provide guidance for State regulatory authorities through threshold criteria developed on a regional basis and issuing technical guidelines for State regulatory authorities to use in determing when to apply the discretionary designation criteria. OSM has rejected both alternatives. Given the language of Section 522(a)(3), OSM believes that it cannot restrict the discretion of the States beyond the specific language of the four criteria in the Act. Providing threshold criteria or guidelines might restrict this discretion and would not be consistent with the weighing of resource values on a case-by-case basis which is required by the Act.

Additional comments suggested various elaborations on the criteria for economic and technological infeasibility of mining. One commenter suggested providing specific standards concerning infeasibility of reclamation. The commenter stated that the legislative history provided some guidance for determining the infeasibility criteria. The references given were merely summaries of the Act's requirements with no guidance. The same commenter stated that a checklist of performance standards would facilitate citizen participation. OSM has rejected this suggestion because a checklist of performance standards which is not a verbatim copy of OSM and/or State regulations could be misleading and possibly preempt the permit process.

A commenter suggested a provision for generic level designations, which presumably would require the State regulatory authority to identify all areas that fit the description of the generic type. For example, if a petitioner provided the regulatory authority with allegations that certain ecosystem types were not amenable to reclamation, the regulatory authority would then have to decide whether it agreed with the evidence and, if it did, proceed to locate all areas in the State where the particular ecosystem type was found.

Another commenter suggested that OSM first identify physical variables which determine a site's amenability to reclamation, such as soil type, contour, vegetation, climate; then develop models using these variables, along with an assessment of current technological capacity to reclaim to Federal standards, and cost estimates for reclamation. Objective cutoff points could be established defining technological and economic feasibility by deciding how much and what level of technology can reasonably be utilized and how much expense is acceptable. This commenter believed that, without elaboration of objective scientific factors, the regulations for designation add little to the structure of the permit approval process.

Another commenter suggested that OSM should provide binding guidelines for determining that reclamation is not technologically and economically feasible. This commenter believed that binding guidelines are necessary because the Act provides a mandated scheme for designating property, and, at the present time, there is no method to determine what is economically or technologically reclaimable. Additionally, by requiring each State to gather its own information, there will be duplication of effort, possibly inconsistent approaches from State to State and chaos among the regulatory authorities. This commenter believed that technologically and economically reclaimable land is presently unknown and that no regulatory authority presently has the capacity to make such a determination. Still another commenter was concerned that, without national guidelines it will be virtually impossible, in States where coal mining is economically significant, to have the State regulatory authority set up objective criteria. The commenter believed the objective criteria are necessary because of the economic pressure in these States. Further, a national standard would prevent inconsistencies among the States.

OSM has rejected all the above suggestions related to feasibility of reclamation. OSM believes that Section 522(a)(2) of the Act provides the sole criterion: when reclamation is not feasible for technological or economic reasons. Regarding elaboration of this criterion, it is virtually impossible to provide national guidance for applying this criterion to every piece of land where reclamation may or may not be feasible. In general, this determination must be made on a site-specific basis using a combination of information and analysis regarding both the site and the equipment, vegetation, and reclamation techniques which might be proposed by an operator, real or hypothetical. In other words, there exists a nearly infinite number of variables for a decisionmaker to consider in determining whether reclamation is feasible. OSM agrees that it will be difficult to make decisions based on the infeasibility criterion. Nevertheless, in cases where there is information relevant to specific areas or generic information on soil types, ecosystem types or local hydrology, this information may be used to designate lands unsuitable based on the infeasibility criterion.

The House Interior Committee has stated that the designation process should be applied on an area basis and upon petition, indicating that Congress intended to tie the process to specific geographic areas. H.R. 95-218, p. 95 (1977). OSM has therefore tied the designation process to specific geographic areas where there might exist conditions which would preclude successful reclamation. In other words, a petitioner would be responsible for identifying a specific area and presenting allegations to show that this specific area met one of the designation criteria, while the State regulatory authority would be responsible for gathering additional facts and asking the public for additional information. However, the State regulatory authorities will gather generic level information in their data bases and inventory systems for use by the public and the State in preparing and considering petitions. Because generic level designations would require a two-tiered decision process by the State regulatory authorities, they would impose an additional burden on the States.

The idea of providing objective standards against which to measure reclamation feasibility is attractive because it would ensure designation if petitioners could convince a regulatory authority that certain conditions were present on a site. The reality of the

situation is, however, that there are too many variables to be taken into account and only occasionally will the presence of certain conditions, by themselves, be sufficient information on which to base a designation decision. For these reasons, OSM has decided not to elaborate on this criterion.

Some commenters suggested that a single petition should trigger a comprehensive review for all the designation criteria resulting in a positive declaration that the lands are suitable for mining. OSM has rejected this suggestion for several reasons. Once a petition has been ruled upon and if the regulatory authority makes a negative determination, an applicant may pursue a permit application through the permit process, but a negative determination on a petition does not result in a positive determination of suitability. Because all of the designation criteria do not apply to every situation, the addition of a requirement for a comprehensive review based on one petition could result in a waste of time and effort. A petitioner could request a comprehensive review, providing that the statement or allegation of facts and supporting evidence pertain to all the criteria, but there is no authority under the Act to require a petitioner to provide facts concerning all possible criteria. Under the Act, the threshold test for a petition is that it must contain allegations of fact and supporting evidence, presumably for the criterion on which the petitioner believes a designation should be based. Given the requirements of the Act, it would be an unfair burden on the petitioner to require him or her to produce information regarding criteria for which he or she has no concern.

The final regulation provides maximum flexibility for the State regulatory authorities to cover criteria other than those listed in a single petition. Thus the regulatory authority can cover as many additional criteria as it wishes under the present regulation.

Some commenters suggested adding "upon petition" to all the criteria in order to clarify that the areas in Part 762 may only be designated through the petition process. OSM has accepted this suggestion.

A commenter suggested revising Section 762.11(b) by adding a requirement that the petitioner specifically allege in a petition that a mining operation would definitely result in damage. This commenter believed that this change would screen out petitions not asserting facts and supplying supporting evidence. OSM has rejected this suggestion because this determination is left to the actual decision on the petition. Further, even where damage would result, there is discretion to not declare the area unsuitable for mining.

In summary, the final regulations will not preclude the State regulatory authorities from designating an area unsuitable for reasons other than those alleged in the petition. For example, in the course of a petition proceeding, a State regulatory authority may uncover information concerning the petitioned area which, although very important, is outside the scope of the original petition. In this case, the State regulatory authority is free to designate the area unsuitable on the basis of a criterion not in the original petition.

Some commenters suggested that there should be more definitive criteria for designating lands unsuitable. In response to these comments, OSM has changed the language of the regulations to be identical with the language of the Act by deleting "all or" and "ecologic". Other comments suggested various modifications, additions or deletions. OSM has rejected all suggestions of variation from the language of the Act. The final criteria repeat the language of the Act.

Section 762.12 describes how a State may adopt additional criteria. Some commenters suggested deleting this entire section. They argued that it was too open ended, was unfair to operators and the public, would lead to Federal land-use planning and violated the Act because Congress had not specified that States could adopt more stringent designation criteria. Other commenters argued that it exceeded the intent of the Act because Section 522 does not authorize the Secretary to adopt more stringent criteria. OSM added this section to implement Section 505 of the Act and to specify that States may adopt additional designation criteria that would be more stringent than those set forth in Sections 522(a) (2) and (3). OSM has changed the final regulation to clarify that the additional criteria must achieve additional protection of the environment to insure that Section 505 is implemented. Additionally, the final regulation clarifies the fact that the Secretary is responsible for additional criteria on Federal lands only, not private lands within a State.

Section 762.13 sets forth exemptions from designations of lands unsuitable for mining. The comments unanimously opposed the proposed provision of Section 762.13(b) that an exemption is attached to an operator, not the land. OSM has accepted this view and changed the final regulation accordingly, believing that exemptions properly apply to the land, not the operator.

Section 762.14 provides for exploration on lands designated unsuitable for mining. Many commenters objected to having exploration on designated lands be approved by the State regulatory authorities and cited Section 522(a)(1) of the Act which states ". . . such designation shall not prevent the mineral exploration pursuant to the Act of any area so designated." Other commenters suggested deleting "to insure that exploration does not interfere with any value for which the area has been designated unsuitable for surface coal mining." OSM believes that this phrase is necessary to ensure that exploration will be carried out in such a way as to protect the value specified in the Act. Regulatory authority approval does not mean denial of the right to conduct exploration for coal; its purpose is to ensure that the methods used in exploration operations are compatible with the protection of those lands and areas designated unsuitable for mining. A commenter suggested limiting exploration on designated lands to the core drilling method and banning surface exploration completely. OSM has rejected this comment because only in cases where the values for which the land was designated were threatened by a particular method of exploration would the method for exploration be at issue. The State regulatory authority should be able to specify the exploration method in those cases, but OSM believes a blanket banning of all surface exploration methods is unnecessary. OSM has inserted the word "coal" in the second sentence to indicate that noncoal exploration is not covered and has deleted the phrase "involving the removal of more than 250 tons of coal in any one location" to insure that all exploration would take place using methods to protect the designated areas.

PART 764—STATE PROCESSES FOR DESIGNATING AREAS UNSUITABLE FOR SURFACE COAL MINING OPERATIONS

There was no section in the proposed regulations explicitly stating OSM's policy on burden of proof during the designation process. The implicit policy was to assign no burden of proof to any party. Many comments were received on this issue, leading OSM to consider four alternative ways of assigning the burden of proof. Those four alternatives were: (1) the regulations as proposed, which did not assign a burden of proof to any party; (2) assign the burden of proof in favor of a petition to the regulatory authority, to be presented to an independent decisionmaker; (3) allow the regulatory authority to take a position for or against a petition, with an independent body acting as decisionmaker; and (4) assign the burden of proof to the petitioner, with the regulatory author-

ity remaining as a neutral decisionmaker.

OSM has chosen alternative 1 in modified form, which does not assign a burden of proof to any party; but, in order to assure that state regulatory authorities are not burdened with frivolous petitions, the final regulations specifically allow for rejection of frivolous petitions. Additionally, "brief" has been deleted from the requirement to describe how mining would adversely affect an area, and "approximate" has been deleted as a part of the requirement to describe the size of the petitioned area.

There are many reasons why OSM chose to assign no burden of proof to any party, and to make this policy explicit in the final regulations. Section 522 was included in the Act in order to insure that a planning process would be used to assure that mining is conducted only when compatible with other values. In the usual context of planning decisions from which the criteria of Section 522(a)(3) were developed, no single party or agency is assigned a burden of proof. In general, planning decisions are not made in an adversary proceeding but are the result of professional opinion, public participation and weighing of resource values. Thus, the criteria of Section 522(a)(3) are not suitable for an adversarial proceeding, but rather a planning procedure involving professional opinion, public participation and a weighing of resource values.

Moreover, Section 522(c) provides a very low threshold for the petitioner's burden to present a petition: "Such a petition shall contain allegations of facts with supporting evidence which would tend to establish the allegations." The same standard is necessary to be able to intervene in the process. Other than this description of the required petition contents, Section 522 contains no suggestion that there be a burden of proof on the petitioner. In fact, there are numerous provisions of Section 522 which indicate that the petition process is intended to trigger an internal planning-type review by the regulatory authority; they include the following:

Section 522(a)(1)—"Each State shall establish a planning process enabling objective decisions based upon competent and scientifically sound data as to which, if any, land areas of a State are unsuitable for all or certain types of surface coal mining operations pursuant to the standards set forth in paragraph (2) and (3) of this subsection";

Section 522(a)(4) requires a State to demonstrate that it has developed or is developing a process which includes: (i) a State agency responsible for surface coal mining lands review; (ii) a data base and inventory system which will permit proper evaluation of the capacity of different land areas of the State to support and permit reclamation of surface coal mining operations; (iii) a method or methods for implementing land-use planning decisions concerning surface coal mining operations; and (iv) proper notice and opportunities for public participation, including a public hearing, prior to making any designation or redesignation pursuant to this Section;

Section 522(c) requires the regulatory authority to issue and furnish to the petitioner and any other party to the hearing, a written decision regarding the petition and the reasons therefore and, prior to designating any land areas as unsuitable, the regulatory authority must prepare a statement containing: (i) the potential coal resources of the area; (ii) the demand for coal resources; and (iii) the impact of such designation on the environment, the economy, and the supply of coal (Section 522(d)).

These three requirements indicate Congress' concern that the State regulatory authorities have the proper resources and procedures to conduct a planning-type review. If the process envisioned by Congress were not an internal planning-type review, the Act would contain some definite standards against which to measure evidence. There are none. In fact, for four out of five of the designation criteria, the Act provides discretion to the regulatory authority. Thus, even if the regulatory authority finds that mining would affect a valuable resource, it can determine that the value of mining the coal outweighs the value of preserving the other resource and proceed to not designate the area unsuitable.

Based on these considerations, OSM has determined that no burden of proof will be assigned to anyone in the final regulations. Designation decisions are to be made in the same fashion as land use planning decisions, with the regulatory authority gathering facts and analyzing these facts which are also available to the public. Additionally, the public will gather and analyze facts and will have access to the record being compiled by the regulatory authority. When the regulatory authority makes its decision, it will consider all the facts gathered by itself and the public. It will also consider the coal resource statement.

OSM has decided not to assign the burden of proof in favor of a petition to the regulatory authority for the following three reasons. First, under this alternative, it is unclear how the regulatory authority would exercise its discretion to designate or not designate under the discretionary criteria of Section 522(a)(3). Second, where the regulatory authority is unable to prove that an area is unsuitable for mining and the opponents present a strong case, the record would suggest that the area was suitable for mining. An operator could then proceed to use the designation record in a permit proceeding as evidence to support the permit application. Thus the permit process could possibly be preempted by a designation proceeding. Third, this alternative would impose a burden on the coal industry to attempt to disprove that lands are unsuitable for mining. In the event that no person in the coal industry had an interest in arguing against a designation, the regulatory authority would be unable to argue against a designation. As a result, some areas where coal mining could be the wisest use of the resources on the land might be wrongly designated.

OSM has also rejected the alternative of allowing the regulatory authority to take a position for or against a petition, with an independent body acting as decision maker. In order to prepare a case, the regulatory authority would have to decide early in the process which side to argue. Under these circumstances the regulatory authority would likely make this decision without adequate information. Also, it would be difficult for a petitioner or intervenor to know what information to prepare to support his/her position without knowing which side of the case the regulatory authority intended to argue.

OSM did not choose to assign the burden of proof to petitioners who would be responsible for supporting the petition before the regulatory authority, although the only legislative history that OSM could uncover concerning burden of proof assigns the burden to petitioners. During the Congressional debates on H.R. 11500, a predecessor to the Act which contained language identical to section 522(c), Congressman Teno Roncalio explained the designation process and defended it against Administration criticisms. Congressional Record, June 20, 1974, p. 20340. In so doing, he stated, "The burden of proof for unsuitability is on the petitioner not the regulatory authority . . ."

OSM has decided, however, not to assign the burden of proof to the petioner. There are many reasons for this decision. Most petitioners could not afford to sustain the entire burden of proving that an area should be designated unsuitable throughout a designation proceeding. This burden would effectively limit participation in the designation process to petitioners with financial resources and access to legal counsel. Additionally, with the low threshold for a petition in Section 522(c) and the requirement for a public hearing within 12 months, the petition process could become a way to disrupt and delay the permit process

without actually having lands designated.

Further, even if a petitioner succeeded in proving that an area was unsuitable under the 522(a)(3) criteria, the regulatory authority would still have discretion to refuse to designate it, and a petitioner's only recourse would be to seek judicial review of that rejection as arbitrary and capricious. Also, where a petitioner did not prevail, there would exist a record that the area is suitable for mining. An operator could then proceed to use the record to support issuance of a permit, and the permit process could possibly be pre-empted by the designation proceeding.

Another reason for rejecting this alternative is that it would impose a burden on the coal industry to attempt to disprove that lands are unsuitable for mining. In the event that no person in the coal industry had an interest in arguing against designation, the arguments in favor of not designating an area would remain unheard. Finally, this alternative seems inconsistent with the many requirements in Section 522 for the State to acquire data on its own. If Congress had intended to place the burden on the petitioner, it would not have required the States to have an elaborate process for gathering data, maintaining a data base and inventory system and for preparing a coal resource statement.

Commenters suggested various revisions to the general process requirements of this section. One suggested revising the regulations to specify "all" data and "all" information "received by the regulatory authority." Another commenter suggested deleting "and other relevant information." An additional commenter suggested adding the word "planning" before "process," otherwise the process would be preempted. OSM has rejected all of these suggested revisions. The deletion of "planning" reflects OSM's interpretation of the Act that the phrase "planning process" implies a process more elaborate than that needed to respond to petitions.

Section 764.13(a) specifies who has a right to petition to have an area designated unsuitable. Commenters suggested various additional tests in order to limit eligibility, such as (a) living adjacent to the proposed mine, (b) having a legal interest, and (c) being directly tied to the mining. OSM has rejected these suggestions because Congress specified that the standard for any person having an interest which is or may be adversely affected, should be as broad as that established by the Supreme Court in *Sierra Club* v. *Morton*, 405 U.S. 727 (1972). Leaving the phrase as defined in the proposed regulations under Part 700.5 accomplishes that goal.

Section 764.13(b) lists the information that a petitioner must set forth in a petition. Commenters suggested changing "indicating" to language from the Act, "which would tend to establish," because using the language of the Act would make the regulation less susceptible to erroneous interpretation. OSM has accepted this suggestion. Some commenters suggested that the petitions should contain more detailed information such as (1) requiring the petitioners to supply a list of affected fee-title holders, (2) requiring the petitioners to supply additional detail on the petitions, (3) allowing the regulatory authority to require any other applicable information as it deems necessary, (4) defining more precisely the location and size of the area and (5) adding the qualifier substantially to describe how mining has affected the area. Other commenters suggested that the regulatory authority assist the public in accumulating data for petitions. OSM has rejected most of these suggestions in order not to make the requirements for petition contents more restricted than the Act.

In response to another comment, OSM has deleted "statement or" from Section 764.13(b)(2) to track more closely the language of the Act. OSM does not intend for petitioners to supply surveys to the regulatory authority, nor does it intend for petitioners to supply information regarding location in metes and bounds.

Sections 764.13(b)(4) and 769.13(c) require the petitioner to give his/her name, address and telephone number. Commenters suggested that there should be some way to protect the confidentially of the petitioner. In response to these suggestions, OSM has considered requiring the regulatory authority to keep the petitioner's name confidential at the request of the petitioner. Additionally, OSM has considered providing that petitioners who believe they are being harrassed or otherwise discriminated against could use the protection afforded under 30 CFR 830, Protection of Employees. OSM has rejected both these alternatives for two reasons; the Employee Protection provisions under Section 703 of the Act apply only to employees, and OSM believes the petition decision-making process, as with other decision-making processes under the Act, should be an open procedure.

Sections 764.13(c) and 769.13(b) list the requirements for terminating designations. Commenters suggested deleting the statement "not contained in the record of the proceeding in which the area was designated unsuitable." These commenters were concerned that this requirement would preclude introducing information which was misinterpreted or erroneous as reported in the record of the designation proceeding. OSM does not intend to preclude introducing new information when the original information was erroneous but believes it is not necessary to change the language of the final regulation to accomplish this result.

Other commenters suggested revising or deleting the language relating to nature or abundance of the protected resource. Several stated that this standard is inconsistent with the statute. They suggested that the nature or abundance of the protected resource or condition or other basis of the designation standard for the termination petitions should be deleted. A commenter suggested that the language be replaced with changes in reclamation technology or reclamation economics which have occurred since the date of the initial designation which now make reclamation technologically or economically feasible.

Instead of the nature or abundance language, another commenter suggested adding the phrase significant changes in the conditions found in Section 762.11 on which the designation was based. Another commenter was also concerned that the standard for termination was less than the standard for designation, thereby providing more avenues for termination than are set out in the statute because Section 522 does not speak of uniqueness of an area or abundance of a resource as criteria for designation. A commenter stated that this language might allow a termination even though lands were designated unsuitable due to infeasibility of reclamation which is an absolute standard not subject to any further tests.

OSM's intent in interpreting the statute concerning termination of designations was to provide a standard based on new information about the resource being protected or on new technology. Concerning the resource being protected under the discretionary criteria, OSM's intent was to allow reconsideration of an unsuitability designation if new information was found which could establish that the decision for the designation was based on incomplete or incorrect information. For example, if it were discovered that an area previously thought to be the only habitat in a State for a species of plant or animal was later found to be only one of many habitats for the species, that fact might render the designation incorrect because that decision would have been based on erroneous and outdated information. OSM recognizes that decisions based on the discretionary criteria of Section 522(a)(3) require weighing and balancing resource values; therefore, a change in the knowledge concerning abundance of the protected resource

could properly lead to a reconsideration of a designation.

OSM inadvertently applied the standard of a change in the nature or abundance of the resource to both the mandatory criterion of reclamation infeasibility and the discretionary criteria. The only standard intended by OSM to apply to the mandatory criterion was a change in the technology or economics of reclamation. The language has been revised to accurately reflect OSM's intent. Regarding the resources or condition being protectable during and after mining, OSM did not intend to introduce a lesser standard than the Act. OSM has therefore revised the language by replacing "protectable" with "affect" to reflect OSM's original intent.

Section 764.15(a)(2) requires the regulatory authority to determine whether any coal resources exist in the petitioned areas. A commenter suggested that the regulatory authority be required to identify recoverable resources and the extent of such resources. This commenter was concerned that some coal resources may not be recoverable and that the extent of the recoverable resource is important to match the potential for the particular area. This would impose a burden in excess of that necessary to determine if the State regulatory authority could reject the petition for absence of coal. Additionally, requiring the State regulatory authority to match the extent of the resource to the potential for the particular area requires judgments which should be left to the actual decision on the designation petition.

Another commenter suggested that requiring the regulatory authority to identify resources near the area under petition is ambiguous and imposes an undue burden on the State regulatory authorities in considering petitions. In objecting to the "or near" language, the commenter pointed out that the coal resources near the petitioned area are not relevant to the petition. OSM agrees with the commenter because the State regulatory authority must concern itself with coal resources within the area specified in the petition and has no need to enlarge the area in question. If a petitioner wants to have the regulatory authority consider an area near the petitioned area, that area can and should be covered by a separate petition or by amending the first petition. Accordingly, OSM has deleted "or near" from the final regulation.

Section 764.15(a)(7) states how petitions affect the permit process. OSM received many comments on this subsection. Some suggested that providing for any cut-off, at least until the permit is actually approved, was contrary to Section 510(b)(4) of the Act, which prevents approval of a permit application if an area is under study for designation. They further argued that establishing a cut-off would create a new exemption that would not be authorized by Section 522(a)(6) of the Act. These commenters objected to any limitation on filing petitions until the time when a permit is issued. Other commenters suggested deletion of this Section in its entirety, stating that the petition process can be used to harass permit applicants. Some commenters suggested that a conditional permit be issued until a decision is reached in the designation proceeding; these commenters apparently ignored the limitation of Section 510(b)(4).

Some commenters suggested other specific cut-off times or leaving the cut-off time to the discretion of the State regulatory authorities. Those who supported earlier cut-offs were largely concerned about the use of the petition process to harass permit applicants. Several who suggested later cut-offs argued that the public needed a longer period to find out about pending permit applications and to prepare a designation petition. Leaving the cut-off to the discretion of the State regulatory authorities was supported by those who wanted to allow for flexibility from State to State.

OSM believes that some cut-off is necessary in order to facilitate an orderly permit process. Without a cut-off, petitions could indefinitely delay a final decision on a permit. The cut-off at the end of the public comment period is consistent with the permit approval or denial process established by Section 510 of the Act.

The final regulation makes it clear that petitions received after the close of the public comment period cannot prevent the regulatory authority from issuing a decision on a permit application. OSM believes that extending the opportunity to petition beyond the period for public comment on a permit application would effectively nullify the time limits for public comments on permit applications established in Section 513 of the Act. The petition process could be used to object to the permit after the statutory deadline for such objections. Close of the public comment period means at the close of any informal conference held under 30 CFR 786.14, or, if no conference is requested, at the close of the period for filing written comments and objections under 30 CFR 786.12-13.

Additionally, under this final regulation, the State regulatory authorities must continue to process petitions covering areas surrounding approved permit areas; they cannot reject a petition which covers both a permit area and other areas, but must processs the petition for those unpermitted areas. The only petitions that may be returned pursuant to this cut-off provision are those that relate to the same permit area as the permit application for which the public comment period is closed. Any later petitions which cover other portions of the same mine plan area must still be processed unless the additional areas involved are insignificant to the purposes of the petition.

Section 764.15(b) requires the State regulatory authorities to circulate copies of the petition to various parties including persons with an ownership interest of record. Some commenters suggested allowing three weeks for the State regulatory authority to circulate the petition. Others suggested requiring the State regulatory authorities to notify owners with a "legal" interest instead of requiring the State regulatory authorities to circulate the petitions to people with an ownership interest of record in the property. OSM agrees that allowing the State regulatory authorities three weeks instead of two would provide the time needed to identify adequately all parties who should be notified. OSM has rejected the suggestion to provide for notification of persons with a legal interest rather than ownership interest because legal interest is broader than ownership interest and may include liens, easements and other interests that do not constitute ownership. Under the final regulation, the State regulatory authorities may use whatever means they find satisfactory to determine an ownership interest of record in the property. State regulatory authorities do not necessarily have to do title searches to identify these owners.

Other commenters suggested deleting the requirement to circulate copies of the petition. Deleting this paragraph would require persons, organizations or agencies having an interest in petition actions continually to monitor State hearing notices on such actions and to request copies of petitions of interest to them. Deleting this circulation provision would be contradictory to Sections 102(b) and 102(i) of the Act, which require that interested parties be notified and involved in the administration and enforcement of the Act and regulations. For these reasons OSM has rejected this suggestion. Another commenter suggested extending the time period for notifying the public of receipt of the petition to five weeks. OSM has rejected this suggestion because this notice is not a heavy burden and it should be balanced with the countervailing concern of making rapid decisions and transmitting those results to the public quickly.

Section 764.15(c) states that, until three days before the State regulatory authority holds a hearing under Sec-

tion 764.17, any person may intervene in the process. Some commenters suggested shortening the time for intevenors until 10 days before the hearing to conform with the draft regulations for Federal lands. OSM has changed the Federal lands regulations, however, to permit intervenors to enter those proceedings up to three days before the hearing. The longer period is conducive to greater public involvement.

Section 764.15(d) requires the State regulatory authority to compile and maintain a record relating to each petition. The record must be kept at the main office as well as a central location of the county or multicounty area of the petitioned land. OSM received comments suggesting deletion of the requirement that the record be kept in more than one location. If the commenters' suggestions were adopted, members of the public living near the petitioned area would have to bear a greater financial burden of travelling to the main office of the regulatory authority to obtain information regarding the petitions. It is more equitable to have these costs borne by the regulatory authority in the interest of greater participation by the public than to have members of the public individually bear these costs. Another comment strongly supported these provisions as proposed. OSM believes that the final regulation gives sufficient discretion to the regulatory authority to choose a location in the county or multicounty area affected by the petition other than the geographic center. If a centrally located community does not have the facilities required, the regulatory authority may choose the county seat or another community which has the required facilities. OSM believes that the public participation provisions of the Act are directed at making significant and meaningful participation by the public as easy as possible. The final regulation implements this policy.

Section 764.17 provides the requirements for hearings on petitions. Nearly every aspect of this section received comment. Many commenters recommended that the time period for holding a public hearing on a petition be shortened from 10 months. Recommended alternatives ranged from 45 days to 6 months. Commenters were concerned that the petition process not be used as a tactic to delay mining. OSM agrees that the time between filing of complete petitions and the public hearing should be minimized; however, the Act provides for a 10 month period if necessary and there may be situations where the maximum time period is necessary. This time period is not intended to serve as an average. Public notice requirements negate any time periods shorter than about 2 months, allowing the time necessary to prepare public notices. The volume of petitions received at one time, the complexity of the issues involved and staff capability may require that hearings be scheduled over the maximum time available. Combining hearings could expedite this process.

A few commenters suggested that this entire section be deleted. OSM believes that the Act specifically requires a public hearing unless all petitioners and intervenors stipulate agreement before the hearing. Therefore, OSM has rejected this suggestion.

Some commenters suggested deleting the requirement for verbatim transcripts of public hearings. They further suggested that, if the requirement is not deleted, the language should be clarified to indicate clearly that the regulatory authority is responsible for preparation of the transcripts. Some commenters suggested that tape recordings be allowed in lieu of a verbatim transcript and some commenters stated that verbatim transcripts are costly and suggested that tape recordings are adequate. In OSM's view, the public hearing is intended to provide the regulatory authority with information that will assist it in reaching a decision on the petition. A record of the hearing is necessary for review by the regulatory authority, petitioners and the general public. Verbatim transcripts can be reproduced easily and made available as necessary. OSM recognizes the significant cost involved in preparation of verbatim transcripts but also notes that the regulatory authority could receive funds under an OSM grant to cover part of these costs. The proposed regulations explicitly stated that the regulatory authority shall make a verbatim transcript of the hearing. Thus, no change was necessary for the final regulations.

Sections 764.17(a) and 769.17 address the hearing procedures. The proposed regulations specified that the hearing was to be a legislative, fact-finding hearing with no cross-examination or sworn testimony. OSM received numerous comments concerning the degree of formality required for the hearing. In response to the comments, OSM has considered the alternatives presented below.

A number of commenters urged that OSM provide for these hearings to be adjudicatory and require such formalities as sworn testimony, cross-examination and an administrative law judge as presiding officer. They presented a variety of arguments in favor of this approach: (1) This procedure is fairer and better suited to resolving factual disputes; (2) formalities are necessary to provide the landowner with due process if the final decision is in favor of designation, thus depriving him or her of some of the uses of the property; (3) more facts will be obtained through this procedure; (4) a better record will be compiled to allow for objective judicial review; (5) designation is more like a condemnation proceeding than a zoning hearing and even zoning cases are sometimes quasi-judicial. Some commenters favored an adversarial hearing because they believe that a designation of unsuitability is a taking of property without due compensation. Several commenters claimed that an adjudicatory hearing is required when there are questions affecting property, leading to a possible taking. The commenters compared designation decisions to zoning decisions and stated that zoning decisions are often made through adversary proceedings. The commenters contended that an adversary hearing would develop a better, more complete record because cross-examination of witnesses could elicit more information than would be obtained through mere presentations.

A two-tiered hearing system with first an informal conference, then an adversary hearing was also suggested. Commenters who favored this two-tiered process observed that there are pros and cons to both types of hearings. They suggested an informal conference, followed by an adjudicatory hearing held only if the preliminary decision were to designate the lands unsuitable, patterned after the permit application process. Again, these commenters believed that an adversarial hearing was necessary before making a decision affecting the use of property.

A few commenters suggested that the hearings be kept informal, but that there should be an opportunity for the State regulatory authority and the audience to ask questions of the speakers. In addition to the advantages discussed above, this procedure would allow for more extensive facts to be obtained without the formalities of sworn testimony and cross-examination and without incurring the expense of assistance by attorneys. OSM encourages such open procedures, but has left the decision on whether to include them to the discretion of the regulatory authority, which can best determine the specific requirements of an informal hearing according to its own needs and procedures.

Several commenters wanted the States to be given discretion to choose which type of hearing would be held. They believed that the States should have flexibility to adopt the hearing process to their other requirements of administrative law. OSM has rejected this suggestion in order to provide for consistency nationwide.

A commenter preferred adjudicatory hearings but suggested a hybrid proce-

dure, combining the formality of an Administrative Law Judge (ALJ) presiding, with a choice for witnesses either to testify or only submit written evidence, but those who testify would be subject to cross-examination. Written evidence would be given less weight. Once the petition triggers the process, the State regulatory authority would provide all data to support designation under any of the discretionary criteria and would assist the petitioner in presenting his case. Other parties could intervene and the ALJ would then compile and certify the hearing record to the State regulatory authority for a final decision, which would be written findings of fact and conclusions of law. In this manner, it would be in a proper form for judicial review. This hybrid was apparently designed to address OSM's concerns about reducing formality and expense and ensuring that the State regulatory authority itself makes the final designation decision. OSM has rejected this suggestion in order not to place an undue burden on petitioners.

OSM has chosen not to adopt an adjudicatory hearing procedure for the following reasons. First, Section 522(c) does not require an adjudicatory hearing. OSM believes that an informal hearing meets the requirements of the Act. Second, because cross-examination of witnesses may be used to discredit them and their testimony, OSM envisions that cross-examination could easily be used to intimidate witnesses whose own experience might provide valuable information for the record. Where, for example, mining has allegedly caused flooding, the testimony of people who have lived in the area before flooding and after flooding would provide valuable testimony for the record. Without this kind of testimony in the record, it would be incomplete. Thus, OSM believes that the hearing should provide an opportunity for the regulatory authority to hear expert opinion as well as the experience of people whose lives are directly affected by mining.

Commenters who wanted an adjudicatory hearing hinged their arguments on a belief that a designation is a taking for which compensation must be paid. Under the recent Supreme Court decision, *Penn Central* v. *New York City*, 438 U.S. 104 (1978), there is no taking for which compensation must be paid unless the property owner has a reasonable expectation of being able to use his property a certain way. Thus, OSM believes that there is no taking for which compensation must be paid unless an operator already has a permit for that area which was obtained as of August 3, 1977, or needs the coal to continue an operation which was permitted before that date. Because coal mining has been a permitted activity under various State and Federal statutes for many years and because it is illegal to mine without a permit, an owner of coal cannot have a reasonable expectation to mine it without having a permit. Further, while certain permits may have been routinely obtained in the past, the Act makes it very clear that mining will not be allowed where all the performance standards cannot be met. Thus, at least since the date of enactment of the Act, it has certainly not been reasonable for operators to expect automatic approval of a permit.

OSM has also rejected suggestions of the commenters that the form of the hearing be changed; the final regulations provide for an informal, fact-finding hearing without cross-examination of witnesses or sworn testimony. OSM recognizes, however, that within the framework of an informal hearing, States may apply their own applicable procedures for hearings on actions affecting property including appropriate judicial review.

Sections 764.17(b)–(e) set forth minimum requirements for public hearings conducted pursuant to Section 522(a) of the Act. To comply with Section 522 of the Act, a State must demonstrate it has developed or is developing a process which includes "(D) proper notice, opportunities for public participation including a public hearing prior to making any designation or redesignation, pursuant to this Section." In framing this section of the regulations, OSM attempted to set forth requirements that were not overburdensome and followed normal hearing and notice procedures. One commenter said that the proposed language does not assure notification of the coal lease owner and permit applicant, and suggested more specific language. The regulation requires notice to any person with an ownership interest or other interest known to the regulatory authority. A person holding a lease would qualify as a person with an ownership interest; a permit applicant would certainly be known to the regulatory authority and would receive notice. Thus, OSM believes that the existing language is clear and covers all of the regulatory authority's responsibilities to give notice to persons, organizations, or agencies having ownership, mineral or otherwise, including the coal lease owner and permit applicant.

Some commenters urged that the notice requirements of Sections 764.17 (b) and (c) be expanded to require maintenance of a public participation list and to require radio announcements to inform the general public of upcoming hearings. OSM believes that the public notice requirements set forth in Sections 764.17 (b) and (c) provide a reasonable opportunity for all interested parties to become informed of the proceeding; however, regulatory authorities may increase notice requirements for their own programs such as preparing press releases and published schedules. OSM supports these efforts but believes additional requirements in the regulations would be unduly burdensome.

Another comment suggested that copies of decisions on petitions be provided to all parties notified under Section 764.17(b). Requirements related to decisions on petitions are covered under Section 764.19. The regulation requires sending the decision to the petitioner, every other party to the proceeding and the Regional Director. OSM believes that the regulations under Section 764.19 are sufficiently broad to assure that all those with an interest will be provided with a copy of that decision.

A few commenters suggested that the newspaper advertisement requirement of Section 764.17(c) is sufficient without Section 764.17(b), which requires notice to other governmental agencies, the petitioner, intervenors and persons with an ownership interest or other interest known to the regulatory authority. The suggestion to delete certified mailing requirements was also made. Paragraphs (b) and (c) separate those individuals, agencies and groups that most likely have an interest in the proceedings from those whose interest is unknown at the time a decision to hold a public hearing is reached. For this reason, OSM believes that precautions such as sending notices by certified mail to those listed in Section 764.17(b) is required. Therefore, OSM has not changed this requirement.

Other commenters suggested that the requirement to notify "any other person known to the authority to have an ownership interest or any other interest in the area covered by the petition," was nebulous and overly broad. Groups or individuals without ownership interest in the property may make their interests known to the regulatory authority and they should then be notified of the hearing. The key is that their interest must be made known to the regulatory authority. The final regulation does not require the regulatory authority to seek out unidentified individuals or groups that may have some interest.

Commenters also suggested that the time limits in paragraphs (b) and (e) be increased from 30 and 15 days to 60 days and 30 days, respectively. They claimed that additional time would be needed to prepare testimony. OSM has decided to retain the same language of (b), (c) and (e) for the final regulations but extended the 15 day limit of (e) to 30 days and added language to clarify that persons with

other interests be notified if known to the regulatory authority. Some commenters suggested deletion of Sections 764.17(b), (c) and (e). OSM has rejected this suggestion because it could allow a regulatory authority to disregard the provisions of the Act requiring proper notice.

Several commenters suggested combining the newspaper advertisements provided in Section 764.17(c) into three consecutive ads during the three weeks immediately prior to the hearing. They maintained that this requirement is simpler and easier for the regulatory authorities to meet. OSM has rejected separating the advertisements in order to ensure that the newspaper advertisements appear at times when most persons are likely to see them.

Some commenters suggested deleting the requirement for consent of all petitioners and intervenors to consolidate hearings on petitioned areas in the same locale. They believed that the consent requirement should be at the discretion of the regulatory authority and not a mandatory requirement. OSM agrees that the regulatory authority should be allowed the flexibility to consolidate the hearings and has changed the final regulation accordingly.

Some commenters suggested that the preliminary statement required by the proposed regulations is contrary to Section 522.(d) of the Act which only requires preparation of the detailed statement prior to an unsuitability designation, not prior to the hearing. Another commenter suggested that the State regulatory authority should not be required to go to the expense of a detailed statement until a substantial case has been made for the designation of land unsuitable. OSM has accepted this suggestion and changed the final regulation to require preparation of one statement after the public hearing.

A commenter believed that the regulations should specify the areas to be analyzed for economic impacts. The point was raised that the resources from some coal fields can affect both world and sub-country-level markets; thus, the demand and supply impacts of a designation could require extensive and costly analysis and modelling of international markets unless the regulations are specific as to the level of analysis required. OSM agrees that economic models could be burdensome and expensive. According to the legislative history (Senate Report No. 95-128, p. 94 (1977)), the regulatory authority is required to draw its data only from existing and available information. In order to clarify the responsibilities of the regulatory authorities, OSM has added this phrase to the final regulation.

Section 764.19 sets forth procedures to be followed by the regulatory authority in deciding on a petition to designate lands unsuitable for mining. A commenter suggested that the listing of items to be considered during the decisionmaking process be expanded to include a fifth item, all information submitted at the public hearing. OSM believes this item would be unnecessary because this information would be part of the information received during the public comment period which includes the hearing and would thus be considered in the decisionmaking process.

Another commenter took exception to the language included in the preamble to the draft regulations which stated, "The drafters believe there is a burden on the State to establish a measure of uniqueness for areas covered by petitions under the discretionary criteria of Section 522(a)(3)." The commenter viewed this statement as an additional showing to be made before an area could be designated unsuitable. OSM does not intend to make a State show that every area is unique before it can be designated unsuitable. Only in cases where a reason for designation would be that the area in question is an important area for certain flora or fauna or a rare area for other reasons would it make sense to establish a measure of uniqueness. It would not be applicable in cases of natural hazards lands or where mining would be incompatible with land use plans. Additionally, it would not be applicable where reclamation was infeasible for technological or economic reasons.

Several commenters suggested that the time period for a written decision on a petition to designate lands unsuitable for mining be reduced from 12 months in those cases where no public hearing is held. OSM has not adopted this suggestion because of potential scheduling problems. If the time frames were reduced, there might not be enough time to prepare an adequate coal resource statement or gather enough other material on which to base a sound decision. The final regulation does not require the regulatory authority to wait 12 months to make a decision, but states that a decision must be made within 12 months after receipt of the complete petition.

Some commenters suggested deleting all time frame requirements. Section 522(c) specifies that a decision must be reached within 60 days of the hearing, but it is silent on time periods in those cases where no public hearing is held. Because a public hearing must be held within 10 months after receipt of a petition, OSM believes it follows that the maximum time for issuance of a decision is 12 months.

A commenter suggested deletion of paragraph (c) providing for judicial review. The commenter believed that this paragraph is inconsistent with Section 526(e) of the Act. Inasmuch as Section 522(c) establishes a definite time period for the decisionmaking process (60 days after completion of a public hearing), OSM does not believe that this paragraph is inconsistent with the Act. Where failure of the State regulatory authority to act would constitute a denial of a right, there should be an appropriate judicial remedy which this section provides.

A commenter suggested that the conditions of Section 769.18(b) should apply to State programs. No change in the final regulations is necessary due to the fact that Section 764.19(b) already applies the conditions of Section 769.18(b) to State programs.

Section 764.21 describes data base and inventory system requirements. A commenter suggested that an agency other than the regulatory authority be allowed to develop and maintain the data base and inventory system, while the regulatory authority remains the actual decision-making body. Under Subchapter C, each State must have a central regulatory authority but may delegate certain responsibilities to other agencies provided there is a specific agreement between the agencies which delineates the functions being delegated. In the case of designations, OSM believes that the data base and inventory system could properly be delegated to another agency, but the decisionmaking responsibility must remain with the central regulatory authority.

Another commenter suggested that this section be revised to follow the language of the Act exactly; this would make it clear that the inventory system and data base are not created after petitions for designation are received. The final regulation makes clear that the regulatory authority must gather data not only in response to petitions, but also in anticipation of petitions.

Other commenters suggested that data compiled by State fish and wildlife agencies should be made a mandatory source for the data base and inventory system. The intent of the regulations is to specify that certain known sources be used, while leaving the regulatory authority free to add information from other sources if it chooses to do so in order to give the states flexibility and prevent duplication of effort. If the State regulatory agency has access to information necessary to make determinations on unsuitability of lands for mining from other state agencies or other sources, OSM believes that the State need not duplicate that information in the data

base and inventory system required under this section of the regulations. Requiring the inclusion of data from other sources, whether or not those agencies actually have the information, could place an unnecessary burden on the States. OSM believes the states need flexibility in designing the systems to fit the capability available to them and to best serve their purposes.

A commenter suggested that the regulations should specify a system for updating the data base. The commenter believed that, without procedures for updating the system, important new information which could affect designations may inadvertently be left out of the system, causing the issuance of permits for areas that should be designated as unsuitable lands. OSM believes that this concern is adequately covered by Section 764.21(c) and has not changed the final regulation.

A commenter suggested that the statutory language—objective decisions based upon competent and scientifically sound data and other relevant information—is too general. This commenter suggested that OSM attempt to elaborate further a methodology or specific planning process. Because the States have such varied needs, OSM believes that they should be left a large measure of discretion regarding the data base and inventory system. Therefore, this suggestion has been rejected.

Another commenter suggested that the States should be able to require that the petitioners supply the data upon which the designations would be based. Section 522(a)(4)(B) clearly requires that the State maintain a data base and inventory system. A State must also demonstrate that it has developed or is developing a data base and inventory system. For further discussion, the reader is referred to the preamble for Part 764 concerning burden of proof.

A commenter suggested that the data base and inventory system is too expensive and that the information required may not be available. This commenter apparently ignored Section 522(a)(4)(B) of the Act which requires that such a system be established. The sources of information, such as information from the U.S. Fish and Wildlife Service and the State Historic Preservation Officer, are to be included only when they are available. Another commenter stated that despite the wording of the Act, which says a State must demonstrate it has developed or is developing a process, there is legislative history to support the view that the data base and inventory system should be *in place* before a state program is approved. OSM has not accepted this suggestion because OSM believes that the Act is explicit on this point. Moreover, OSM could not find any legislative history to support the commenter's contention, and the commenter provided none.

Section 764.23 describes public information requirements. Commenters suggested that the regulatory authority should be required to hire or assign staff to assist petitioners to retrieve necessary information to complete a petition. OSM believes the requirement that the information be available for public inspection and copying includes putting the information in a form that can be used by the general public. If sophisticated date storage and retrieval systems are utilized by the regulatory authority, it follows that some assistance to the public for use of the system will be needed. However, requiring actual research assistance to petitioners is beyond the intent of the Act; therefore, OSM has rejected this suggestion.

Some commenters also suggested that the regulatory authority undertake workshops about the designation process and criteria. OSM has rejected these comments because such workshops are beyond the requirements of the Act. The regulatory authority might find such public information tools helpful in the designation process, however, and may use them if it wishes.

Additional commenters suggested that the wording of Section 764.23(a) be changed to exclude information of a confidential or proprietary nature. They pointed out that those portions of the date base which identify the exact location of endangered species or archaeological finds may lead to the destruction of these resources. A commenter cited 16 U.S.C. 470(a)(4) for an analogous exception. That reference states: "(4) to withhold from disclosure to the public, information relating to the location of sites or objects listed on the National Register whenever he determines that the disclosure of specific information would create a risk of destruction or harm to such sites or objects."

OSM recognizes the potential for abuse of any data system. Because much information of this nature will be obtained from other agencies, any protection from similar State or Federal laws would be applied before the information were provided to the regulatory authority. State and Federal agencies should be told by the regulatory authority that all information gathered under OSM funding and included in the data base must be available for public inspection.

A commenter suggested that Section 764.23 be deleted entirely. OSM has rejected this suggestion because the Act indicates that opportunities for public participation must be provided in the designation process. OSM believes that meaningful public participation is enhanced if the public is provided access to inventory and technical data developed or assembled by the regulatory authority.

A commenter suggested restricting the persons to whom information on the petition process is made available to those having an interest which is or may be adversely affected. OSM has rejected this suggestion because requiring the regulatory authority to give information only to those "having an interest which is or may be adversely affected" would force the regulatory authority to make a premature determination on standing before a petition is ever received. The existence of an adversely affected interest should be determined by a State regulatory authority after receipt of a petition, not before. Further, OSM believes that the intent of the Act is to make all information relating to the petition process, except that exempt under the Freedom of Information Act, available to the public.

OSM received several comments suggesting deletion of the requirement of Section 764.23(c) to prepare a brochure because the Act does not specifically mention a brochure and because the procedures are outlined in detail in the Federal regulations and will also be included in the State statute and regulations. In response to these comments, OSM has deleted the brochure requirement, leaving preparation of any brochure to the discretion of the States; but the final regulation still requires the States to provide information to the public regarding the petition procedures.

Section 764.25 describes regulatory authority responsibility for implementing the petition process. In an internal edit of the regulations, Section 764.25(a) and (b) were deleted. These Sections were replaced by a general section stating that permits cannot be issued inconsistently with the designation process. Several commenters suggested insertion of the phrase "in an administrative proceeding" into Section 764.25(b). They pointed out that this phrase was needed so that the language follows Section 510(b)(4) of the Act. OSM has rejected this suggestion because Section 764.25(a) and (b) as proposed, were deleted from the final regulations.

A commenter suggested inserting a reference to pending designation proceedings. This commenter apparently ignored the cut-off requirement in Section 764.15(a)(7). Thus, OSM has rejected this suggestion because it would not add anything to the regulations.

OSM also received comments suggesting that a completed petition be filed before approval of a pending

permit can be delayed. OSM has rejected this suggestion because it would be contrary to Section 510(b)(4) of the Act which requires only that a designation proceeding be commenced, which occurs as soon as a petition is filed, not once that State regulatory authority has determined that a petition is complete.

A few commenters suggested that State regulatory authorities be able to charge a reasonable cost to the public for copies of the maps of designated areas. They believed that this provision was necessary to allow the State regulatory authorities to recover their costs for making the maps available to the public. OSM believes that State regulatory authorities have discretion under the final language to do so if they desire to recover their printing costs.

Several commenters suggested that broader categories of information should be kept confidential. One wanted to protect information on valid existing rights and substantial legal and financial commitments. Another believed that information on coal seam location, thickness and pitch should be confidential. Neither provided any further explanation beyond assertions that this information should not be made public. OSM has rejected this suggestion because it ignores the provisions of Sections 507(b)(17) and 508(a)(12) of the Act which limit the confidentiality of permit application information to analysis of the chemical and physical properties of the coal.

PART 765—DESIGNATING LANDS UNSUITABLE FOR SURFACE COAL MINING OPERATIONS UNDER A FEDERAL PROGRAM FOR A STATE

Section 765.13(b) requires the Secretary to implement a process for designating lands unsuitable immediately when failure of a State to implement or maintain a process for designating lands unsuitable is a reason for failure of a State program. Some commenters suggested deleting this subsection. OSM has rejected this suggestion because, although Section 504(a) of the Act provides that implementation of Section 522(a), (c) and (d) shall be delayed for one year after a Federal program is implemented, that provision of the Act does not address the situation where the failure of a State designation program is the reason for implementing the Federal program. Rather, it envisions that a State designation program would already be in place and should not be dismantled by the Federal program. But, where there is no adequate State designation program, it is essential that a Federal designation program be implemented immediately in order to satisfy the mandate of Section 504 of the Act that all aspects of the permanent program be fully in place by 34 months after enactment.

Another commenter suggested that OSM should clarify whether failure to implement the designation process should result in implementation of a partial program. OSM has not accepted this suggestion because specifying whether a partial or complete Federal program is needed predetermines the results of the evidence presented at a hearing for a Federal program under Part 736. Evaluation of other parts of the State program will help determine whether to implement a partial or a complete Federal program. Section 765.3 of the proposed regulations has been entirely deleted because it repeated materials already covered in Part 736.

PART 769—PETITION PROCESS FOR DESIGNATION OF FEDERAL LANDS AS UNSUITABLE FOR ALL OR CERTAIN TYPES OF SURFACE COAL MINING OPERATIONS AND FOR TERMINATION OF PREVIOUS DESIGNATIONS

This Part sets out the provisions for implementing a process for responding to petitions on Federal lands. Because this Part parallels, in most respects, Part 764, the final regulations for Part 769 have been revised in the same manner as those in Part 764, and the reasons described in the preamble to that part are also applicable here. Several commenters suggested deleting this entire part. They believed that Congress did not intend the petition process to apply to Federal lands. They stated that Section 522(c) of the Act provides for petitions to the regulatory authority, a term which they believed does not include the Secretary. Further, they quoted a Conference Report that only mentions State regulatory programs in connection with a petition process. Under the Act, the only explicit reference to the Secretary and the petition process is when the Secretary promulgates a Federal program for state lands. Additionally, they believed that establishing a petition process would conflict with the coordination of the Department of the Interior's leasing policy and the Department of Energy's energy policies.

OSM has rejected this suggestion. OSM believes that Congress intended there to be a petition process on Federal lands. This process parallels explicitly established procedures under Section 601 of the Act which requires a petition process and a review process working simultaneously. Additionally, Section 523 of the Act requires that "the Federal lands program shall, at a minimum, incorporate all of the requirements of the Act . . ." OSM believes that, because the petition process is one of the requirements of the Act, the Federal lands program must include a petition process. Moreover, the petition process is a valid means of increasing public participation as required under Section 102 of the Act. Section 201(c)(13) of the Act allows the Secretary, acting through the Office, to perform such other duties as may be provided by law and relate to the purposes of this Act, thereby providing authority for the Secretary to establish a petition process for Federal lands in order to provide increased public participation.

Section 769.7 requires the Regional Director to maintain a map of areas designated unsuitable, to make information available to the public and to make designation decisions consistent with mine plan approvals. OSM received comments suggesting that only petitions for an area received before permit applications are received for the same area should be accepted. OSM has rejected this suggestion because it would be inconsistent with Section 510(b)(4) of the Act, which makes it clear that Congress wanted the petition procedure to continue after permit applications have been received.

Another commenter suggested that a permit applicant not be allowed to apply for a permit which includes any areas designated as unsuitable or for which a designation proceeding is pending. OSM has rejected this suggestion because the inclusion of this provision would place an unreasonable constraint on initiation of the permitting procedure. If a designation petition can be considered after a permit application has been received, then permit applications should also be considered even after a petition has been received. It would be unfair to operators to prevent them from filing permit applications until a designation is made; this could delay the permit process unreasonably. Thus, permit applications may be considered at any time, but permit determinations cannot precede designation decisions.

OSM has modified the regulations to delete redundant requirements. As part of this internal edit, (a) and (b) of Section 769.7 were deleted. To replace them, OSM has added a new 769.14(i) which makes it clear that a petition may be filed after a permit application is received but will not be considered if filed after the close of the public comment period. OSM also has deleted any reference to confidentiality of information because that is covered elsewhere in the regulations.

Section 769.13 specifies the requirements for the contents of petitions. A

few commenters suggested that these requirements be amended to require that the petitioner show the effects of mining to be substantial, believing that the law should take into account *de minimus* effects. OSM has rejected these suggestions because adopting the commenters' suggestions would preempt the decision on a petition. It is the regulatory authority, not the petitioner, who decides if mining would substantially or significantly affect an area. OSM changed Section 769.13 to cross-reference Sections 764.13 (b) and (c) to assure that Federal and State program requirements are identical, and to shorten the length of the regulations.

Section 769.14 deals with the initial processing, record keeping, and notification requirements for petitions on Federal lands. A commenter suggested that there be a cutoff period for considering petitions because repeatedly filed petitions could be used to delay or prevent the issuance of a mining plan. The commenter pointed out the fact that a cutoff provision exists for the designation process under State programs but not for the Federal lands program. OSM has revised the Federal program regulations to be consistent with the State program regulations and included a cutoff provision in Section 769.14 but with slightly different language. Part 776 concerning permits has also been revised to ensure that a complete permit application will be received before advertisement and receipt of public comment on the permit application. The revised language of this subsection therefore specifies that the permit application will be complete before the comment period begins.

Several commenters suggested that consultation with the Geological Survey be required prior to a determination of whether coal deposits exist in or near the petitioned area. They maintained that it is the responsibility of the USGS to assess mineral potential on Federal lands. OSM believes that consultation with USGS is provided for in the coal leasing regulations and, because it is set forth in Departmental procedures, it need not be reiterated here. OSM has inserted a new paragraph 769.14(d) to correspond with 764.15(a)(5) concerning frivolous petitions.

A commenter suggested providing a mechanism for petitioners to discover what evidence had been used in making a determination on a rejected petition. OSM agrees and has modified the language to provide a petitioner with such a mechanism. The regulation, as now written, specifies how the Regional Director will respond. If there is a dispute over what constitutes new evidence, the petitioner should raise the question in the context of a specific case.

Some commenters suggested that OSM delete Section 769.14(f) because they believed that it improperly uses the vague term "consider" and improperly interjects existing land use plans into the designation process. Another commenter suggested that a copy of the land use plans be sent to the petitioner. The commenter apparently was concerned that a petitioner and the Regional Director would have different opinions on the adequacy of the consideration given a possible designation in the land use planning process. The final regulation requires that the surface managing agency only recommended to the Regional Director whether or not the land use plan adequately consider whether the land is unsuitable for mining.

Other commenters believed that subsection (f) is in conflict with Section 523(a) which requires the Secretary to be responsible for designation of Federal lands as unsuitable for mining in accordance with Section 522(b). They believed that, by utilizing existing land use plans, the Secretary is abrogating his responsibility. OSM has modified (f) to make it consistent with the July 3, 1978 memorandum between the Assistant Secretaries for Energy and Minerals and Land and Water outlining the petition process. This memorandum indicates that, upon receipt of a petition for a certain area, OSM will forward it to BLM which will expedite the Federal coal lands review process for that particular area. If that review results in a conclusion that satisfies the petitioner, OSM will inform the petitioner, asking if the petitioner wishes to withdraw his/her request for a hearing. If the request is not withdrawn, OSM will hold a hearing. Where the OSM decision is in conflict with BLM's recommendation, the memorandum states that the petition will be referred to appropriate Washington offices for resolution. Where BLM had already made a determination under its Federal coal lands review procedures, the same procedures regarding the hearing and decision would be followed.

Section 769.17(c) allows consolidation of a petition hearing and a mine plan approval hearing with the consent of the petitioners and intervenors. A commenter suggested that consolidation of these hearings might prejudice the proceeding and turn the designation process into a highly confrontational dispute. OSM has rejected this comment because consolidation of these hearings would eliminate duplication of effort which would be beneficial in many instances. The Regional Director may only combine hearings with consent of all petitioners and intervenors.

Section 769.18 provides procedures on making decisions concerning petitions on Federal lands. A commenter suggested providing a mechanism for the Regional Directors to defer their petition decisions to surface managing agencies for some Federal lands. OSM has not followed this suggestion because the agreement reached with BLM concerning the division of functions and responsibilities under the Act provides for the recommendation of the surface management agency and will give BLM adequate input into the decisionmaking process. Additionally, where BLM and OSM disagree on a particular petition, that petition will be forwarded to the Secretary for resolution and final decision.

SUBCHAPTER G—SURFACE COAL MINING AND RECLAMATION OPERATIONS PERMITS AND COAL EXPLORATION PROCEDURES SYSTEMS

PART 770—GENERAL REQUIREMENTS FOR PERMITS AND COAL EXPLORATION SYSTEMS UNDER REGULATORY PROGRAMS

(1) Authority for this Part is found in Sections 102, 201, 501, 503, 504, 506, 507, 509, 510, 512 and 522 of the Act. This Part contains the general requirements for permit systems under regulatory programs for surface coal mining operations and procedural systems under those programs for coal exploration. Some of the proposed provisions of this Part received no comments and remain unchanged in the final regulations, except for minor editorial or grammatical variations which are not intended to alter the substantive meaning or effect. Further discussion of the basis of authority and purpose for this Part is contained in the Preamble to the proposed regulations (43 FR 41687, September 18, 1978). All comments or significant changes with respect to Part 770 are discussed below.

(2) In connection with the permit requirements, a number of commenters expressed concern over the plight of the small operators and the burden upon them to comply with new permitting regulations in general. Others were concerned that small operators not be granted special exemptions or variances in the type of data required in submission of a complete permit application. In the final regulations, OSM has addressed these concerns in a variety of ways, but the extent of relief for small operators is constrained by the explicit limitations of the Act.

The Act and its legislative history clearly recognize that small operators

may be burdened by compliance with the Act, and the Act grants only certain specific limited assistance to these operators, e.g., the small operators exemption in Section 502(c) and the provision of certain services to small operators relating to hydrology and test boring under Section 507(c).

However, Sections 507, 510 and 511 of the Act require that extensive information be provided before a permit application can be approved, and also provide no exemption or variance for small operators. Moreover, the court has ruled that OSM has no authority to grant exemptions or variances from the requirements of the Act, except where Congress explicitly provided for this authority. (*In re: Surface Mining Litigation*, 452 F. Supp. 327 (D.D.C. 1978)). Therefore, except for those elements of the final permit regulations which are not specifically required by the Act, OSM cannot lawfully create exemptions for small operators in the final regulations. On the other hand, OSM may reduce the information required with respect to particular types of environmental resources where, due to the small size of the mine area (as opposed to the mine operator), the impact on those environmental resources will be minimal. In that regard, modifications of particular application requirements in Parts 779 and 780 are discussed in the Preamble for those Parts.

(3) Part 776 of Subchapter G provides minimum regulatory program standards for procedures applicable to coal exploration on non-Federal, non-Indian lands. Part 776 also is limited to coal exploration performed outside land which is already under a current permanent regulatory program permit. Exploration performed inside the latter type of area is regulated as surface coal mining and reclamation under other parts of Subchapter G.

(4)(a) Section 770.2 states that the objective of Part 770 is to ensure that surface coal mining and reclamation operations will be conducted "only after the regulatory authority has first determined . . . that . . . (such) operations are conducted so as to fully protect the environment." A number of commenters objected to the phrase "to fully protect the environment" and suggested changing the word "fully" to "adequately" or "reasonably." Other commenters thought that the objective should be to minimize the impact of surface coal mining and reclamation operations on the environment. The phrase "fully protect the environment" was intended to mean that the purposes of the Act should be fully served under the permit process. It was not, as the commenters assumed, intended to be an "anti-degradation" provision. These comments have, therefore, been rejected.

(b) A commenter asserted that the States are not given enough discretion in the regulatory process to factor distinct regional and local differences into the permit process. Part 731 of the regulations explains in detail the provision for regional and local differences to be provided in State programs. The commentor did not indicate why Part 731 was inadequate to account for those differences, and, therefore, no change has been made in this Part.

(5)(a) Section 770.5 provides for the definition of terms which are used frequently in different parts of Subchapter G. The basis and purpose and statutory authority for this Section was discussed at 43 FR 41687, September 18, 1978.

(b) Several commenters questioned whether the term "complete applications," as defined in Section 770.5, included the submittal of or proof of application for other permits required under laws other than the Act. The answer is no. This definition requires neither: (1) that other permits required under other laws be obtained prior to filing of the application under the Act, nor (2) that applications or proofs of submittal of applications for permits required under other laws be made part of the Act's application, unless a particular State chooses to require this as part of its State program. If a State decides to do so, then OSM would have to approve that action under Section 505 of the Act.

It should be noted, however, that OSM has been engaged in negotiations with the Environmental Protection Agency (EPA) concerning whether the contents of application for an NPDES permit could be coordinated with, and serve to satisfy in part, the Act's application requirements. Those discussions have not yet been concluded. See also, the Preamble to Sections 770.12 and 816.42, for an explanation of the terms of Surface Mining Act coordination requirements with other laws.

(c) A number of commenters expressed concern over the definition of "general area" in the proposed rules.

The term "general area" is based upon the requirements of the Act at Sections 507(b)(11), 508(a)(13), and 510(b)(3), that the regulatory authority make an assessment of the probable cumulative impacts of all anticipated mining in the locale around the area for which a particular permit is being sought. "General area" is used to describe the area for which hydrologic information must be available to the regulatory authority before this assessment can be made. Legal authority for this definition is Sections 102, 201, 503, 504, 506, 507, 508, 510, 515, 516, 517, 522 and 717 of the Act.

The basis and purpose for the definition were generally discussed at 43 FR 41687 (Sept. 18, 1978). Under the proposed rule, the definition would ordinarily have been tied to the scope of the Department's Office of Water Data Coordination "catalog unit." As a result of public comments, the final rule utilizes a definition that will ordinarily be much narrower in scope, with appropriate distinctions drawn between surface and ground water.

(i) The Act differentiates between "onsite" and "offsite" data and specifies that both types of hydrologic data are required before the regulatory authority can make the necessary assessment. . *See* Sections 507(b)(11), 508(a)(13), and 510(b)(3), of the Act. Because "onsite" data refers to data obtained from the area that would be eventually permitted, i.e., the mine plan area, "offsite" data are those data obtained from outside the mine plan area, (see the discussion on the definition of mine plan area in the Preamble to Section 701.5).

In this context, the inner limit of the "general area" is defined as the same as and contiguous with the outer limit of the mine plan area. Therefore, it is necessary to define the outer limit of the "general area" in terms of the area which will provide sufficient quantities and kinds of hydrologic data for reasonably assessing the environmental impacts of all anticipated mining in the "general area."

The "general area" must also be large enough to establish locations which provide baseline data that are not anticipated to be hydrologically or otherwise initially affected by proposed mining operations. This is needed to:

(a) Provide baseline information on the normal, ambient hydrologic conditions of the area prior to mining, to determine potential impacts of proposed mining operations, and

(b) Analyze what additional information (if any) the regulatory authority may deem necessary to require the operator to gather for the determination of the probable hydrologic consequences.

On the other hand, the area should be small enough to eliminate "masking" or confounding effects from other existing mining activities or nonmining hydrologic influences. This is important, because the applicant, when developing its "determination" under Section 507(b)(11) of the Act, needs to analyze only the impacts of its mining operations on the hydrologic balance; the regulatory authority makes the "assessment" involving the cumulative impacts of all anticipated mining in the area. If the area is not delineated properly to account for the cause-effect relationship for a particular operation, then it will be impossi-

ble for the regulatory authority to evaluate the determination and approve the permit application or to make a proper assessment of cumulative impacts of all operations in the area. For example, influences of domestic, municipal, or non-mining industrial activities tend to "mask" the natural hydrologic regime and make it difficult to isolate the hydrologic impacts that may be attributed to mining from those due to other causes.

(ii) The difficulty of arriving at a hydrologically sound and workable, blanket definition of "general area" is compounded by the extent of diverse hydrologic and topographic variability throughout the coal fields of the nation, especially in Appalachia. Adding further complexity is the fact that ground water and surface water basins are not necessarily geographically identical. A topographic drainage basin (watershed) will drain surface water to a discrete "outflow" point between drainage divides. However, depending upon the subsurface angle and direction of underlying geologic strata within that same topographic basin, downward percolating ground water will intersect with the geologic strata and may flow outside and into one or more other topographic basins. (Hjelmfelt and Cassidy, 1975. p. 6 and figs. 1, 2; U.S.G.S., 1974b, pp. 20–62 and figs. 7–18; Van Voast, 1974, pp. 16–23; Van Voast, 1975, plates 1, 5, 7, 9, 11; Bur. Mines, 1977b, pp. 50–51, 63; Bur. Mines, 1978, pp. 184–202). Thus a ground water "basin" may be larger than the surface water topographic basin or watershed.

On the other hand, underlying impermeable strata may isolate the ground water from the surface water, resulting in two independent systems that limit or confound indirect-observation techniques. In this case, the ground water basin may be smaller in areal extent than the topographic basin. Often a series of "perched" ground water zones can occur. (Musser, 1963, p. A-20; McWhorter, et al., 1977, pp. 18–22; Bur. of Mines, 1978, p. 184; USGS, 1974b, pp. 20–63, figs. 7–18). Thus, it is imperative that the surface water basins and the ground water basins be separately delineated because of the possible differential flow directions of surface and ground water (Chow, V. T., 1964, pp. 4-23).

(iii) The definition of "general area" involved, in addition to the above discussion, consideration of: (1) the influence of mining activities upon watersheds in which permit areas are located, and nearby unmined watersheds that may be adversely impacted by practices associated with those activities, such as disposal of excess uncontaminated water or contaminated water; (2) the possibility that alteration of ground water recharge zones and rates in mined watersheds may adversely influence the ground and surface water availability in non-mined watersheds; and (3) topography, because of its influence on flow, storage, and retention of surface water.

The concept of "watersheds containing perennial streams" is used in the definition to assure that the scope of the hydrologic assessment is not limited to the flow of water in a single channel of a small wet-weather stream, but includes the total watershed of larger streams. This is needed because the Act protects particularly the public uses of streams (see sections 508(a)(13), 717(b)) which are more likely directly related to larger streams.

Some of the difficulties in assessing cumulative impact of anticipated mining, particularly in areas where mining has been done prior to the approval of State programs, can be overcome by using unaffected or "control" watersheds for comparative purposes. Data from such areas may be required to provide an understanding of the hydrologic differences between mined and non-mined area (Grubb and Ryder, 1972, pp. 17–33). This concept is inherent in the term "areal extent" as used in the definition.

(iv) The Office of Water Data Coordination (OWDC) of the U.S. Geological Survey (USGS) uses a system of catalog units for grouping approximately equal-sized surface water subbasins with approximately equivalent rainfalls within regional areas. The catalog units are used as a basis for segregation of water quality and steamflow data in the NAWDEX and WATSTORE computer programs of the USGS. Work also is underway to make the Environmental Protection Agency's STORET water data storage and retrieval system compatible with these units.

The OWDC catalog units are valid criteria for making rational hydrologic sub-divisions of the nation and, therefore, may serve as a guideline for the hydrologic data acquisition mandated by Section 507(b)(11) of the Act. The Office believes that although mandatory assessment of entire catalog units is not always required, as they were under the proposed rule, the catalog units should be used by the regulatory authority for reference to mine area locations, and data compilation, storage, and retrieval.

(v) In order to fully utilize the advantages inherent in the catalog unit system and, at the same time, assure adequate data coverage at a reasonable level of costs, the Office recognizes that the regulatory authority may require data from a "general area" that will often be more limited geographically than the boundary of the catalog unit. For example, where mining activities have been limited to either the extreme upstream or downstream reaches of a sub-basin because of local geologic or topographic conditions, the regulatory authority may make its assessment using data from that relatively small percentage of the total drainage area of the sub-basin catalog unit in the locale of proposed mining.

The Office recognizes that, in this context, several "general areas" may exist in one catalog unit. In such cases, the regulatory authority may make an assessment of the probable cumulative impact of mining by considering the cumulative data from more than one "general area." Depending upon the location of the proposed permit area, data may or may not be required at the downstream terminus of the sub-basin.

The Office also recognizes that where proposed permit areas lie in more than one catalog unit or overlie areas subject to interbasin transfer of ground water, it may necessitate the use of data from more than one catalog unit and, in such cases, the "general area" may extend beyond the limit of one catalog unit.

(vi) All commenters, except one, construed "general area" to mean the area from which hydrologic data must be collected or obtained by the permit applicant. It is important to note that "general area" is used to define the area on which the regulatory authority must make an assessment of the probable cumulative impacts of all mining in the area and does not define the area from which the permit applicant itself must *collect* hydrologic data. The permit applicant may or may not be required to make use of general area data in order to make a determination of the probable hydrologic consequences in relation to a specific mine. (*See* H.R. Rept. No. 95–218, 95th Congress, 1st Session at 64 (1977); and discussion in Preamble to Sections 779.13–779.16).

A number of commenters expressed concern over the vagueness of the geographic coverage of the "general area" and stated that the imposition of the catalog unit system as the sole criterion for data collecton would result in unjustified costs and the acquisition of irrelevant data. The Office agreed with this position, believing that, in many instances, the excessive amount of data that would result from evaluating entire catalog units, or only that part of a catalog unit downstream from a proposed mining activity, would result in an unjustified expense for data that would not be needed for assessing the cumulative impacts of all anticipated mining in the area.

A commenter stated that OWDC catalog units are "inappropriate," be-

cause they may be much larger than the area anticipated to be impacted by mining activities. This commenter also suggested that hydrologic assessment data be provided only for the watershed in which the mine is located, downstream to a point where the mine area comprises ten percent of the watershed. The Office accepts this position in part, realizing that many catalog units are indeed much larger than the area to be impacted. However, the Office rejects the concept of data acquisition based on a fixed percentage of drainage, because it is felt that such an approach would not provide the flexibility needed for different hydrologic and geologic settings, where the percentage of impacted area may vary greatly. This is especially true for those basins which have a "dynamic" boundary situation as discussed above in paragraphs (ii) and (iii).

A few commenters suggested that "general area" should be limited to the watershed surrounding a proposed permit area and that a "tie-in" to the OWDC catalog is "capricious in that said document is everchanging . . . and is not a common reference document available to the general public nor the coal industry." The Office believes that limiting hydrologic data requirements to the watershed surrounding the proposed permit area may fail to account for changes resulting from the interbasin movement of ground water and possible impacts on wells and streams in adjacent watersheds, particularly during base-flow conditions. The Office does not feel that the OWDC catalog is "capricious"; it will be made readily available to the public and industry by OSM and other involved Federal and State agencies under 30 CFR 779.13(b) and 783.13(b).

A few commenters opposed the proposed definition of "general area" on the ground that it would require compilation of data on a "virtually limitless area" not contemplated by Section 507 of the Act. That was not true, because the USGS catalog units have discrete definitions. In any event, the final rules definition insures a reasonably-ascertainable limit for both surface and ground water applications.

(vii). Technical literature considered in development of the definition of "general area" were:

1. Chow, V. T., 1964, Handbook of Applied Hydrology, McGraw-Hill Book Co., New York, Sections 1-29 (various pagings).

2. Grubb, H. F. and Ryder, P. D., 1972, Effects of Coal Mining on the Water Resources of the Tradewater River Basin, Kentucky, U.S. Geological Survey Water-Supply Paper 1940, 83 pp.

3. Hjelmfelt, A. T., Jr., and Cassidy, J. J., 1975, Hydrology for Engineers and Planners, Iowa State University Press, 210 pp.

4. McWhorter, D. B., and others, 1977, Surface and Subsurface Water Quality Hydrology in Surface Mined Watersheds, (Prepared by Colorado State University, Fort Collins, CO), U.S. Environmental Protection Agency Project R802175 Report, 357 pp.

5. Musser, J. J., 1963, Description of Physical Environment and of Strip Mining Operations in Parts of Beaver Creek Basin, Kentucky, Chapter A in Hydrologic Influences of Strip Mining, U.S. Geological Survey Professional Paper 427-A, 25 pp.

6. U.S. Bureau of Mines, 1977b, Research on Hydrology and Water Quality of Watersheds Subjected to Surface Mining, (Third Semi-Annual Technical Report Prepared by U.S. Department of Agriculture, and Ohio Agriculture Research and Development Center in Cooperation with the U.S. Geological Survey), U.S. Bureau of Mines Contract No. JO166055 Report, 68 pp.

7. U.S. Bureau of Mines, 1978, Research on Hydrology and Water Quality of Watersheds Subjected to Surface Mining, Phase 1: Premining Hydrologic and Water Quality Conditions, (Prepared by U.S. Department of Agriculture and Ohio Agricultural Research and Development Center, U.S. Bureau of Mines Contract Nos. JO166054 and JO166055 Report, 296 pp, and Appendixes A-O).

8. U.S. Geological Survey, 1974b, Shallow Groundwater in Selected Areas in the Fort Union Coal Region, U.S. Geological Survey Open-File Report 84-48, 72 pp. and illustrations and tables.

9. Van Voast, W.A., 1974, Hydrologic Effects of Strip Coal Mining in Southeastern Montana—Emphasis: One Year of Mining Near Decker, Montana Bureau of Mines and Geology Bulletin No. 93, 23 pp.

10. Van Voast, W.A., and Hedges, R.B., 1975, Hydrologic Aspects of Existing and Proposed Strip Coal Mines Near Decker, Southeastern Montana, Montana Bureau of Mines and Geology Bulletin No. 93, 31 pp.

(d) The definition of principal shareholder has been moved to this Section from Sections 778.5 and 782.5 of the proposed regulations. It also has been changed to cover beneficial owners of shares, as well as owners of record. This change is based on comments suggesting focus on all those who exert control on the applicant and the long experience of the Securities and Exchange Commission (SEC) in administering the Securities Exchange Act of 1934 (15 U.S.C. Chapter 2B). That experience led the SEC to require disclosure of both owners of record and beneficial owners of securities. The SEC's regulations for determining beneficial owners are set forth at 17 CFR 240.13d-3.

OSM believes that the regulatory concerns which led the SEC to promulgate this regulaton are similar to the basis for Section 507(b)(4) of the Act, which requires disclosure of persons owning 10 percent or more of any stock in a surface mining operation.

Because management control of a company can be exerted even by beneficial owners of 10 percent or more of such stock, OSM has decided to require that such ownership also be reported by permit applicants.

(6) With respect to Section 770.6, few commenters noted that the regulations contain no references to the Small Operators Assistance Program under Section 507(c) of the Act. A reference to this program has been added to Section 770.6 with a description by referring to Part 795, which was published along with the interim program regulations on December 13, 1977 (42 FR 62710) and remains unchanged for the permanent program.

(7)(a) Section 770.12 implements several Sections of the Act which require regulatory authorities to establish a process for coordinating the review and issuance of permits under the Act with those under any other Federal or State permit process. In addition, this Section implements the requirements of certain other Federal laws which impose duties upon entities implementing the SMCRA, to ensure protection of resources regulated under those other laws. Statutory authority for Section 770.12 is Sections 102, 201, 501, 503, 504, 505, 506, 508(a), 509, 510, 513, 514, 515, 522, 523, 701, 702, and 707 of the Act and the statutes identified at Sections 770.12 (b) and (c).

(b) A few commenters suggested that the wording "Federal Programs" in the first sentence be deleted. Because this Section relates to both Federal and State programs, the language has been changed to "regulatory programs."

(c) A commenter suggested that Section 770.12 be revised to consider mining in national parks. This comment has been rejected as unnecessary, because mining in national parks is prohibited in Section 522(e)(1) of the Act and 30 CFR 761.11.

(d) A few commenters contended that Section 770.12 should mention Federal procedures for the protection of historic and cultural properties (36 CFR Part 800). This comment also has been rejected as unnecessary, because Section 786.19(e) already prohibits permits which allow mining on areas included in or eligible for the National Register of Historic Places, except as provided for in Section 761.11.

(e) One commenter suggested that, in order to coordinate the various environmental provisions of the Act,

OSM should delegate its authority over air, water and solid waste to other appropriate Federal agencies. This comment has been rejected, because OSM cannot delegate any authority, however limited, except as authorized by the Act. Section 515 does require that surface coal mining and reclamation operations be regulated under State and Federal programs for air, Sections 515(b)(4), 515(b)(23); water, Sections 515(b)(4), (5), (8), (9), (10), (13), (15)(c)(iv), (17), (18), (24); and solid waste, Sections 515(b)(4), (10), (11), (13), and (14). The Act does not allow for delegation of authority under these provisions to any entity other than the regulatory authority. However, OSM is currently developing procedures for appropriate, detailed coordination with EPA.

(f) A few commenters questioned whether obtaining all permits under other laws is a prerequisite to issuance of a permit under the Act and Section 770.12. A State is not required under the Act to delay any permitting procedure pending the issuance of permits by agencies under other laws, unless the Act's permit would authorize the operator to take actions in conflict with the more stringent requirements of those laws. Where such a conflict occurs, the State is empowered to withhold issuance of the Act's permit under the Supremacy Clause of the United States Constitution (which makes Federal law supreme over inconsistent State law) and Sections 503 and 702 of the Act. State law cannot lawfully require the regulatory authority to issue a permit within a specified time, if a requirement of Federal law would operate to prohibit issuance of the permit.

It should be clearly noted, however, that under Section 510(c) of the Act and Sections 786.19(g) and (i) of the regulations, the State regulatory authority is required to withhold a SMCRA permit, if the applicant operates other coal mines in violation of other laws relating to air or water environmental protection. Thus the State regulatory authority may have to withhold issuance of the Act's permits, because of lack of concurrence from Federal or State agencies, on a basis independent from Section 770.12 of the final regulations.

(g) A commenter objected to Paragraph 770.12(b), arguing that the planning requirements cited there do not relate to permitting and are, therefore, not authorized under the Act. The Office does not agree and has retained these in the final rules.

(i) Section 208 of the Clean Water Act (CWA) requires that the States prepare and obtain approval of the Administrator, EPA, of "areawide waste treatment management plans," covering a variety of water pollution problems. It is to be the system for a national, comprehensive water quality planning and control process for "non-point" sources of water pollutants. Among other elements, the various State plans are to identify and provide for controlling water pollutants in non-point source discharges (e.g., "runoff") from mining activities (Section 208(b)(G), CWA). In addition, these plans are to provide the primary methods for the regulation of the discharge or other placement of dredged or fill material into navigable waters. Section 208(b)(4)(B) and (C). Dredging and filling is, of course, a common activity associated with coal mining in some areas of the country. Thus, Section 208 plans will clearly have to contain requirements in the regulation of numerous aspects of coal mining operations. (It is noted that EPA has, by policy memorandum, advised its Regional Offices that State reclamation plans and State programs under Titles IV and V of the Act will be deemed to satisfy Section 208, CWA plan requirements for coal mining in the States).

Section 303 of the CWA provides for a national, comprehensive water quality planning and control process that complements Section 208 plans, by covering point sources. Under Section 303(e), the States must establish a continous planning process to ensure that point sources of pollution are appropriately controlled through the imposition of effluent limitations (Section 303(e)(3)(A)), coordination with Section 208 plans (Section 303(e)(2)(B)), and other measures. Coal mining, of course, results in point source discharges, when water is discharged through discrete, confined conveyances.

(ii) The commenter objecting to Section 779.12(b) asserted that inclusion of plans under Sections 208, 303(e) of the CWA was unauthorized because Section 503(a)(6) of the Act refers only to coordination with "other Federal and State permit processes," and further asserted that neither Section 208 nor Section 303(c) required permits.

This argument is without merit. First, Section 779.12(b) is authorized under Sections 201(c)(12), 514(h), and 515(b)(10) of the Act, in addition to Section 503(a)(6). In any event, inclusion of a requirement in the OSM regulations to coordinate the Act's Sections 208 and 303(e) of CWA plans is authorized under Section 503(a)(6) of the Act because Sections 208 and 303(e) plans do constitute elements of a ". . . Federal or State permit process applicable to surface coal mining and reclamation operations." See Section 503(a)(6) of the Act.

Under Section 208(b)(2)(G)(ii), State plans are to include ". . . procedures and methods . . . to control . . ." mine-related sources of pollution. Individual States may well decide to specify permit systems in their plans as the "procedure and method" to control mine-related pollution. Indeed, as indicated above, the EPA expects that the Act's State programs and, therefore, the Act's permits will be used in many States to satisfy Section 208 planning requirements. Furthermore, Section 208 plan provisions are incorporated directly into, and become elements of, the NPDES permit system requirements of Sections 401 *et seq.* of the CWA, 33 U.S.C. Section 1341 *et seq.* Under Section 308(e), CWA, no NPDES permit may be issued if it conflicts with a Section 208 plan requirement. Thus, Section 208 will be part of a "Federal or State permit process" under Section 503(a)(6) of the Act.

Section 303(e), CWA plans also are clearly subject to coverage under the Act. First, a satisfactory Section 303(e) plan is a necessary element of any State NPDES permit program. Section 303(e)(2), CWA. Second, the plans must provide for the imposition of effluent limitations and schedules of compliance on discharges. Section 303(e)(3)(A), (F), CWA which are implemented through the NPDES permit system. See Section 402(a)(1), (b)(1) of the CWA. Thus, Section 303(e) plans are critical elements of the NPDES "permit process" and subject to inclusion within the coordination requirements of Section 503(a)(6) of the Act.

(h) With respect to Section 770.12(c), comments asserted that none of the laws cited there require permits and, therefore, this paragraph is beyond the scope of Sections 503(a)(6) and 504(g) of the Act. It also was contended that none of these laws apply to actions of State agencies, thereby implying that this Section should apply only to Federal programs and Federal lands programs. These arguments mostly have been rejected, on the basis of the Secretary's interpretation of the following statute, three of which he administers:

(i) *The Endangered Species Act of 1973, as amended, 16 U.S.C. Section 1531 et seq. (ESA):*

ESA contains forceful provisions designed to protect endangered and threatened species of plants and animals, entitled to protection by virtue of "listing" by the Secretary of the Interior. Its principal operative provision is Section 7(a) (16 U.S.C.A. 1536(a)).

Pursuant to the ESA, the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (which has jurisdiction over listed species not relevant to OSM programs) have published regulations implementing Section 7 consultation requirements. (See 43 FR 870-876, January 4, 1978). Under these reg-

ulations (50 CFR 402.20), examples of activities which may require consultation include: (1) actions intended to conserve listed species or their habitat; (2) the promulgation of regulations; (3) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (4) actions directly or indirectly causing modifications to the land, water, or air.

Because OSM is required to insure that SMCRA permits under Federal programs must be issued in accordance with ESA requirements, this statute provides authority to promulgate Section 770 12(c) to accomplish that result. First, OSM can issue regulations under Section 7(a) of ESA itself, as it provides for action by the Secretary to "administer" his non-ESA programs to further the purposes of the ESA. Second, Sections 102, 515(b)(10), 515(b)(17) and 515(b)(24) of the Act all provide authority to insure that Title V regulatory programs under the Act provide for protection of fish and wildlife under OSM's implementing regulations.

With regard to State programs, State permits are covered by the opening sentence of Section 7(a) of ESA, which provides that "the Secretary shall review other (i.e., non-ESA) programs administered by him and utilize such programs in furtherance of the purposes of the Act." State programs will be part of the permanent national regulatory program under Title V of the Act and, therefore, will be among the other programs which must further the purposes of ESA.

Even after a State program is approved, the Secretary, through OSM, will continue to administer those programs, by conducting inspection and enforcement actions in the States, funding State programs, and conducting oversight activities to ensure that the States are adequately enforcing State program provisions. Furthermore, permits issued under State programs are actions authorized, funded, or carried out by a Federal agency, as defined in 50 CFR Section 402.02(a).

The regulation covers the "promulgation" of the OSM national regulations, and because State programs will be adopted as Federal rules, the approval of State programs. Therefore, OSM must insure that State programs contain appropriate requirements to prevent jeopardizing listed species and destruction or modification of critical species' habitat. In addition to the direct authority of ESA and the USFW's regulations, OSM also has relevant authority under various provisions of the Act. (See Sections 102, 515(b)(17); and 515(b)(24)).

In conclusion, OSM has the authority required to ensure the coordination of ESA requirements with the issuance of SMCRA permits under Federal and State programs. Other Sections implementing ESA include: 30 CFR 776.13(b)(2) (Coal exploration approval); Sections 780.16(a)(1), 784.20(a)(1) (Reclamation plans); Section 786.17(a) (Regulatory authority permit review coordinations with fish and wild life agencies); and Section 786.19(o) (Permit approval criteria).

(ii) *The Fish and Wildlife Coordination Act, 16 U.S.C. Section 661 et seq. (FWCA):*

FWCA is also administered by USFWS. The operative provision is Section 2(a), 16 U.S.C. Section 622(a). That requires, with respect to actions covered by it, that consultation occur with USFWS and the State fish and wildlife management agency prior to the issuance of a Federal permit or license. The statute covers projects conducted by private enterprises when a Federal license or permit is needed, so persons conducting coal mining would be subject to the consultation requirements.

The FWCA consultation requirement has been closely integrated into permitting requirements under the Federal Water Pollution Control Act (FWPCA), as amended (33 U.S.C. Section 1251 *et seq.*), for all NPDES permits. Prior to obtaining those permits, the applicant must go through the FWCA consultation process. Because FWCA consultation requirements for NPDES and dredge and fill permits (which many coal mining operations must obtain), OSM has authority to specify FWCA as one of the statutes for which coordination must be effected with SMCRA permit applications under Section 503(a)(6) and 504(g). Both of these Sections authorize OSM to promulgate regulations to insure that SMCRA permits are *"coordinated with other State and Federal permit processes."* To ensure that requirements of SMCRA permits are coordinated with NPDES and dredge and fill permits, OSM has the authority to require that SMCRA application reviews be coordinated with applicable requirements of FWCA.

(iii) *The National Historic Preservation Act of 1966, 16 U.S.C. 470 et seq. and Executive Order No. 11593* (NHPA)

NHPA establishes a National Register of Historic Places, requiring all Federal agencies to take into account the effect of agency "licensing" (which includes "permitting") on any facility listed, or eligible for listing in the National Register. Also, Section 522(e) of the Act prohibits mining that will adversely affect public parks or historic places on the National Register, unless approved jointly by the regulatory authority and other agencies with jurisdiction over the park or place.

In addition, Sections 102, 201(c) and 501(b) provide authority for Section 770.12(c). Section 201(c) gives the Secretary authority to promulgate such Section regulations as may be necessary to carry out the purposes and provisions of the Act, while Section 501(b) requires the Secretary to promulgate a regulatory program based on and conforming with, the provisions of Title V. One of the purposes of the Act is to "establish a national program to protect society and the environment from the adverse affects of surface coal mining operations" (Section 102(a)). Other relevant purposes relate to protection of the rights of persons with a legal interest in land and appurtenances thereto (Section 102(b)), and protection of the environment (Section 102(d)). Section 770.12(c) serves to carry out these clauses, with respect to National Historic Register matters.

(iv) *Archaeological and Historic Preservation Act of 1974, 16 U.S.C. 469-1* (*Moss-Bennett Act*)

The Moss Bennett Act provides a means for private parties or the Federal Government to perform actual recovery of archaeological material and data, as for example through surveys, excavation, and transportation to a museum. Upon receiving information as to the imminent loss or destruction of significant data, the Federal licensing agency or department may conduct a survey and salvage program, or transfer funds to the Secretary for that purpose.

Unlike NHPA, Moss-Bennett does not appear to extend, in general, to State program permitting. It applies only to a Federal agency's own activities, in connection with a Federally-licensed project, activity, or program which may adversely affect enumerated resources. Although mines permitted under a State program may arguably be Federally-licensed activities and Federal agencies may be involved in the permit review process, these agencies' activities would not themselves cause the adverse affect on the enumerated resources protected under Moss-Bennett. The sole apparent exception to this would be when OSM approves a State program permit embodying an experimental practice under Section 711 of the Act and 30 CFR 785.13. However, in such cases OSM, not the State regulatory authority, would be responsible for compliance with Moss-Bennett. Therefore, OSM has concluded that Moss-Bennett should not be made applicable to State program permit requirements under Section 770.12(c).

PART 771—GENERAL REQUIREMENTS FOR PERMITS AND PERMIT APPLICATIONS

Introduction

1. This Part implements Sections 102, 201, 501(b) 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, and 516 of the Act. It sets forth the criteria for obtaining and utilizing permits under permanent regulatory programs and the general requirements for permit applications and fees. General discussion of the authority, basis, and purpose of this Part is at 43 F.R. 41687–41689 (Sept. 18, 1978)

2. Two paragraphs of proposed Part 736 (736.4(c); 736.14(b)) which concerned permitting requirements were moved to Part 771 at sections 771.13(a) and 771.15. Succeeding sections in Part 771 were re-numbered. The general authority, basis, and purpose for the sections of Part 736 which were transferred was described in the Preamble to the proposed regulations. 43 F.R. 41679–41680 (Sept. 18, 1978). In addition, material on the types and scales of maps and cross-section plans, in general, and the need to break down map areas according to past mining, which was located in various sections of proposed Parts 779, 780, 783, and 784, has been consolidated at Section 771.23(e) of the final rules.

3. Substantial comment was received on Part 771 and some significant modifications were made as discussed in detail below. Some sections received little or no comment, however, and remain unchanged from the proposed regulations, with the exception of minor editorial changes to clarify their meaning.

4. On Section 771.2, a commenter asked whether facilities ancillary to a surface mining and reclamation operation (such as a storage shed for central distribution of parts) are subject to the permitting requirements.

These facilities are subject to the permitting requirements to the extent that they fall within the definition of surface coal mining and reclamation operations in Sections 701(26)–(27) of the Act and Section 700.5 of the final rules.

§ 771.11 General requirements for permits—operations.

1. Authority, basis, and purpose for this section were generally discussed at 43 F.R. 41687 (Sept. 18, 1978). Minor rewording of this section was made to improve its clarity.

2. One commenter questioned whether reclamation of abandoned mines would require a permit. If activities defined as surface coal mining and reclamation operations under the Act and in Section 700.5 are carried out, regardless of the previous use or present condition of the land, then a permit under the Act is required. However, the reader is referred to 30 CFR Part 874, in particular, and Subchapter R of this Chapter in general, for requirements for abandoned mine reclamation work to be conducted under Title IV of the Act.

3. Several commenters stated that the requirement for having a valid permit to mine coal within eight months from the date on which a regulatory program is approved by the Secretary was much too short. Because two months are allowed for operators to file applications after the program is approved, six months remain for the regulatory authority to review the application. Under Section 506(a), however, permits for existing mines continue in effect, if the regulatory authority does not act within six-months. Several commenters felt that the six-month review period was too long. The comments were rejected, because these time limits are required by Sections 502(d) and 506(a) of the Act.

4. A commenter suggested amending Section 771.11 to explain that cooperative agreements are covered. This suggestion was rejected as unnecessary under 30 CFR 745, as a cooperative agreement provides for the application of a State program to Federal lands. State programs are "regulatory programs" under Section 701.5 of the final rules and covered by Part 771.

5. Some commenters suggested that existing operations be allowed to obtain "revised interim" permits under the permanent regulatory program, arguing that "re-permitting" is simply a duplication with no real benefit. Sections 502(d) and 506(a) of the Act explicitly require that all operations existing eight months after the permanent program comes into effect must obtain a permit under a State or Federal program. State programs and Federal programs are defined in Section 701 of the Act as programs promulgated under Sections 503 and 504 of the Act, that is, under the permanent program. The permanent program provides specific, detailed requirements for permit applications and public participation in review of those applications (see Sections 507, 508, 513 and 514 of the Act), which were not applicable in the interim program. Furthermore, under Section 510(b) of the Act, an applicant must show compliance with all of the Act's performance standards, many of which were not in effect during the interim program. (*Compare* Section 502(c) with 515 and 516 of the Act.) Thus, permits under the interim program cannot satisfy the requirements of the permanent regulatory program.

§ 771.13 Continued operation under interim permits.

1. As explained in the introduction, Section 771.13(a) is a new section derived from Section 736.4(c) of the proposed regulations. It was moved to Subchapter G, where it logically belongs, because it provides for the continued effect of permits issued under the interim program. The proposed version of Section 771.13 has been renumbered as 771.13(b) in the final regulations.

2. Section 771.13(a) is promulgated under Sections 102, 201, 501(b), 502, 503, 504, 506, 510, 515, 516 and 701 of the Act. It implements the provisions of Section 502(f), of the Act, to cover permitting in the period between the Secretary's disapproval of a state program submission under 30 CFR 732 and implementation of a Federal program for the state involved.

3. As proposed, the rule would have precluded issuance of permits during judicial review of the Secretary's institution of a Federal program. A commenter correctly pointed out that this misinterpreted Section 502(f) of the Act, suggesting that the preclusion on issuance of permits applies, instead, to the period which includes judicial review of a dissaproval of a State program submission until the Secretary's promulgation of a Federal program. The final rule has been modified accordingly.

4. Several commenters suggested that proposed Section 736.4(c) be revised, to allow the states or OSM to issue new permits during the period between disapproval of a State program and implementation of a Federal program. That suggestion is not legally possible under Section 502(f) of the Act. Further, interim program permits which lapse during that period continue in full force and effect, and the Secretary must, in any event, institute a Federal program no later than June 3, 1980 (see Section 504(a), of the Act). Therefore, the requirement of Section 736.4(c) should not cause substantial problems for the industry.

5. Section 771.13(b)'s authority, purpose and basis were explained at 43 F.R. 41687–41688 (Sept. 18, 1978). A few commenters suggested that the regulation be amended to allow for continued operation under permits issued before the Act, as well as for permits issued under the interim program regulations, if the regulatory authority fails to act on the permanent program permit. Such a change would not meet the intent of Congress under Sections 102, 502, 503, 504, and 506 of the Act, because it was contemplated that operations commenced under pre-Act permits be regulated to demonstrate compliance with the Act's interim program requirements. (*See* H.R. Rept. No. 95–218, 95th Cong. at 86

1977). Thus, 30 CFR 720.12 requires States to revise pre-Act permits to comply with the interim program.

6. Several commenters requested that the reference in proposed Section 771.13(a) to a "complete" application be deleted. This comment was rejected. Public participation and the review process cannot go forward until a "complete application" is on file, as required by sections 502(d), 513, and 514 of the Act. Ordinarily, those processes will take approximately six months to conclude, so that complete applications are needed within two months of institution of the permanent regulatory program if the regulatory authority is to meet the eight-month deadline of Section 506(a) of the Act. (See also the discussion of Section 771.21 below.)

7. Some commenters requested that Section 771.13(b)(2) be amended to refer to the final decision of the regulatory authority. These comments were rejected as contrary to Section 506(a) of the Act. If the regulatory authority decides against an applicant under 30 CFR 786.17, 786.19, 786.21, and 786.23, the operations involved will no longer qualify for the exemption of Section 771.13(b). Regarding contentions that the exemption must be preserved pending a final decision under Section 514(c)–(e) of the Act, the Office notes that adequate opportunity for a hearing is provided to the applicant in 30 CFR 787.11, which need not occur prior to the expiration of the exemption given the important public interests at stake. (Compare In re Surface Mining Regulation Litigation, 456 F. Supp. 1310 (D. D.C. 1978).

8. In response to concerns that Congress did not intend for existing operation to cease, pending the initial decision of the regulatory authority on the permanent regulatory program application, the Office has clarified Section 771.13(b) to cover interim permits or "amendments" thereof. Thus, revisions and renewals of interim program permits can qualify for the exemption of 771.13(b) under the final rules.

§ 771.15 Continued operation under federal program permits.

1. Authority, basis, and purpose of this section were discussed at 43 F.R. 41688 (Sept. 18, 1978). A change was made in the main text of the section to specify that the Secretary approves of a state program consistent with 30 CFR 730–732. Commenters also requested that the language of Section 771.15 be changed from "shall" to "may" to track with Section 504(f) of the Act. These comments were accepted.

2. Another commenter asked that extension of the 60-day compliance period in Section 771.15(c)(1) be authorized to meet economic considerations. Economic impossibility is not a valid reason for failure to comply with the Act. (*See In re Surface Mining Regulations*, 452 F. Supp. 327, 338–339 (D.D.C. 1978). Moreover the rule allows for an extension beyond 60-days for physical impossibility, similar to the delays allowed for existing structures at the commencement of the interim and permanent regulatory programs.

3. The same commenter's request that the 60-day limit be extended to eight months was also rejected. Section 771.15(c)(1) implements the requirements of Section 504(f) of the Act, setting procedures by which additional requirements of a State program that supersede a Federal program can be imposed on persons holding Federal program permits. Section 504(f) provides that those permittees are to be provided a reasonable time to conform their ongoing operations to the State program's additional requirements. OSM has specified 60 days as that reasonable time limit, with a further extension allowed if either (1) the permittee showed that it was physically impossible to comply within 60 days, or (2) the state agrees to a longer time schedule. OSM maintains that 60 days is a reasonable time for operations to meet additional requirements of state programs, because most states will not have as many additional requirements calling for complete redesigns of structures, as in first implementing the permanent regulatory program.

The 60 days will not begin until the regulatory authority issues an order to the permittee. This will not be immediately upon approval of State programs, but rather after the regulatory authority has had time to consider whether its requirements are additional to Federal requirements. In any event, based upon a showing of physical impossibility, the 60-day limit can be waived. OSM believes that allowing more time would seriously delay implementation of the requirements that a State deems necessary to protect the environment. For this same reason, the term "promptly" has been added to Section 771.15(c)(1) to ensure that the state regulatory authority does not delay in taking this important action. See section 102(a), of the Act.

4. A commenter objected to and another favored the requirement for an adjudicatory hearing in proposed subsection 771.15(c)(2) for the permits that need to be modified when a state program supersedes a Federal program. The Office has deleted the term adjudicatory.

This change leaves to individual states the choice of whether to provide for adjudicatory hearings. Under the United States Constitution, an adjudicatory or informal hearing is not required when an administrative agency acts in a rulemaking proceeding. (*United States* v. *Allegheny-Ludlum Steel*, 406 U.S. 742 (1972); *United States* v. *Florida-East Coast Ry.*, 410 U.S. 224 (1973)). Thus, a state may implement Section 504(f) of the Act by a rulemaking proceeding applicable to all persons holding a permit from the superseded Federal program. Such an approach is encouraged, because it would allow for the most expeditious and flexible approach for ensuring that additional State program requirements are implemented. Also, this approach will not preclude a State, if it chooses, from providing adjudicatory hearings, if required by State law.

§ 771.17 Continued operations under state programs.

Section 771.17 has been moved from Section 736.15(b), because it fits more logically in Subchapter G. The final regulation is otherwise unchanged from the proposed rule.

§ 771.19 Compliance with permits.

1. As a result of the addition at Section 771.17 of the final rules, Section 771.17 of the proposed rules was moved to Section 771.19 in the final rules, but remains unchanged. Authority, basis, and purpose of this section were discussed at 43 F.R. 41688 (Sept. 18, 1978).

2. Some commenters suggested adding specifying that the operator need only comply with State program requirements and not 30 CFR Chapter VIII. These suggestions were rejected, because permittees are still responsible for compliance with provisions of 30 CFR Chapter VIII under State programs. Subchapters A, D (in cooperative agreement situations), and L will be directly applicable. Insofar as Subchapters G, J, K, and M are concerned, individual State program provisions implementing these subchapters will prevail.

§ 771.21 Permit application, and filing deadlines.

1. This section was renumbered from section 771.19 of the proposed rules. Its legal authority, basis, and purpose were generally described at 43 F.R. 41688 (Sept. 18, 1978), with the exception of Section 771.21(b)(4). The latter provision is based on Sections 102, 201, 506, 510, 511, 515, and 516 of the Act and implements principally Sections 506(b) and 511(b) of the Act. It was added in response to a comment on proposed Part 792 (Sections 788.17–788.19 of the final rules), requesting that the time limit at Section 506(b) of the Act be specified in the rules.

2. Several commenters objected to the two-month application filing deadline after initial institution of perma-

nent regulatory programs. These comments were rejected, because that date is required under Section 502(d) of the Act.

The Office also notes that the final rules have eliminated the provisions for mandatory one full water-year data collection requirements at Sections 779.16 and 783.16. Those provisions were cited by the commenters objecting to the two-month deadline as the major obstacle to meeting that time limit. As with other aspects of the application, that change allows for the use of existing data to extrapolate, through valid predictive devices such as modeling, to satisfy the requirements of parts 779–780, 783–784.

3. Comments suggesting that paragraph (a) be amended to add language regarding the area of lands involved were rejected. The existing text relates only to lands on which operations are to occur after eight months from approval of a regulatory program and is sufficiently clear. A new subparagraph (a)(2) was added to clarify how applications filed after the two-month deadline are to be disposed of by the regulatory authority.

4. Comments were rejected that suggested requirements be lessened under paragraph (a), to allow for the staged submission of application information for up to 17 months after initiation of a permanent regulatory program. Sections 502(d) and 506(a) of the Act contemplate that existing operations will have been reviewed and their applications fully processed and evaluated not later than eight months from institution of a State or Federal program. Public participation requirements, regulatory authority review, and coordination with other governmental entities will require most of the six-months prior to the eight-month deadlines. Those requirements make it imperative that complete applications be provided to the regulatory authority within the two-month deadline of Section 502(d) of the Act and 30 CFR 771.21(a)(1).

5. Several commenters suggested that the application filing deadline for permit renewals be changed from 120 to 60 days. This was rejected, because the 120-days are required by Section 506(d) of the Act.

6. Several commenters objected to specifying a six-month prior deadline for filing applications for permit revisions, particularly noting that the need for permit revisions often arises from unforeseen circumstances. As a result, the final rule has been modified at Section 771.21(b)(3), to leave the exact time to the regulatory authority's discretion, subject to allowing sufficient time for adequate reviews and public participation (*See* 30 CFR 788.12.)

§ 771.23 Permit application—general requirements for format and contents.

1. Authority, basis, and purpose for Section 771.23(a)–(d) of the final rules was discussed at 43 F.R. 41688–41689 (Sept. 18, 1978) under Section 771.21, from which the final rule has been renumbered. As explained at the introduction for Part 771 above, Section 771.23(e) of the final rules was consolidated from various provisions of proposed Parts 779–780, 783–784. Comments about the relationship of Section 773.21(a) to small operators are discussed in the introduction to Part 770, and in specific sections of the permit application requirements of Parts 779–780. However, none of the comments to Section 771.21 of the proposed rules provided data upon which a determination could be made that the amount of land affected by surface mining activities is rationally related to the degree of detail needed in permit applications.

2. Other commenters suggested that the language in Section 771.23(d) which require the disclosure of contacts made by the applicants should be a part of the application only "if appropriate." These contacts are not required to be made as part of the application process, but, if they are made, they must be reported in the permit application. OSM determined that this qualification amply responds to the comments, so the commenter's proposed wording has not been added. A commenter suggested a change in subsection 771.23(c) to require full disclosure of the applicant's subcontractors. Because that subsection already requires adequate disclosure of nature of any persons who collect technical data, the relationship between them and the applicant should be apparent to the regulatory authority during the review process.

3. (a) Section 771.23(e)(1) sets forth the general requirements for the format and scale for all maps which must be submitted with a permit application. Authority for this section is Sections 102, 201(b), 501(b), 502, 503, 504, 506, 507(b), 508, 509, 510, 511, 513, 514, 515, 516, 522, and 701 of the Act. High quality map information is necessary to enable the regulatory authority to evaluate the applicant's ability to comply with the performance standards in Parts 816 and 817. (Grim and Hill, 1974, at 17).

(b) In the proposed rules, the scale of maps to be included in the application was specified at several sections. (*See* proposed Sections 779.23(b); 780.13(a); 783.23(b); 784.22(a)). Some ambiguities existed. For example, Parts 779 and 783 would have established a minimum scale of 1:25,000 for maps, but did not mention scale for plans or cross-sections. Parts 780 and 784 specified a minimum scale of 1:25,000 for maps *and* plans, explicitly leaving the scale of cross-sections to the regulatory authority. Parts 779 and 783 would have applied scale specifications to maps of the mine plan and adjacent areas, while Parts 780 and 784 would have specified scales for maps and plans of the permit area.

Also, the scale of 1:25,000 to be established in the proposed rules would have been inconsistent with the 1:6,000 scale of maps required to be made of the permit area under the interim regulatory program. (*See* 30 CFR Section 715.11(c)). That would have led existing operations to re-draw maps, if the regulatory authority implementing the permanent program insisted on use of scales in the range of 1:25,000. The matter was further complicated because those sections of the proposed rules which addressed scale specifications did not appear to cover some types of maps and plans which were required in the applications. (*See* proposed Sections 779.19(b); 779.22(b); 779.26(a); 780.17; 780.19(g); 780.21(a); 780.25(a); 780.29; 780.33; 780.35(a); 780.37 and corresponding provisions of Parts 783 and 784.) The above problems would have resulted in sets of maps, plans, and cross-sections depicting existing environmental resources under Parts 779 and 780 which could not be compared easily to mining and reclamation operations materials submitted under Parts 780 and 784.

Commenters suggested a range in the scale of maps from 1:25,000 to 1:5,000. Some suggested that there should be a limit on the scale of maps based on the Act (1:24,000 or 1:25,000 as set forth in Section 507(b)(13) of the Act). Others suggested that maps be of a enough scale and detail to reveal all significant matters. These commenters suggested, for example, that detailed plans be shown on maps no smaller than 1:25,000 and that larger scale maps such as 1:10,000 or 1:5,000 be required where the details and complexity of the site or operation cannot be adequately represented at a smaller scale.

(c) In Section 771.23(e)(1) of the final rules, the Office has provided for consistent treatment of all maps required in permit applications. Thus, the ambiguities in the proposed rules are eliminated, as to whether some, but not all, maps must have specified scales.

The most important considerations in regard to map scales is the legibility and usefulness of the information depicted. In order for the regulatory authority to make decisions on permit applications, it is necessary to have mapped information of sufficient detail and accuracy as a basis for making relatively precise estimates of,

for example, volume of overburden, waste material and areas needed for topsoil storage. Therefore, the Office has determined that maps of the permit area shall be at a scale of 1:6,000 or larger. This scale is consistent with the smallest scale required by MSHA (30 CFR 77.1200) and with the Act's interim regulatory program (30 CFR Section 715.11(c)).

Maps of the entire mine plan area and adjacent areas, as opposed to the immediate permit area involved, do not need to be in the same scale. Those portions of the application do not involve the same level of detail on location of operations and other features for areas outside the permit area. Therefore, maps of the remainder of the mine plan and adjacent areas, when required, may be of a scale determined by the regulatory authority (but in no event shall such maps be of a scale smaller than 1:24,000) and must clearly show the lands and waters within those areas. The scale which the Office has chosen for mine plan and adjacent area maps is the minimum scale set forth in the Act (*See* Section 507(b)(13)).

(4) The scales of plans and cross-sections are not specified in 771.21(e)(1) and are, therefore, left to the discretion of the regulatory authority. The scale of these materials will necessarily vary for particular facilities and portions of the permit or mine plan area, depending upon the materiality of the issues to which they relate.

(5) The concept of delineation of phases of mining on application maps relates to key dates in the interim and permanent regulatory programs establishing different periods and levels of regulation under the Act. Delineation of those phases in application maps appeared at proposed Sections 780.13, 780.17, 784.11(b), and 784.22. Delineation is required in the final rules as specified at Section 771.23(e)(2).

(a) Section 771.21(e)(2)(i) requires that areas subject to surface coal mining operations prior to the date of enactment of the Act be specified primarily because, if those operations were ceased and not re-started prior to the date of enactment, they are not subject to the Act. Also, if continued, they may be entitled to special treatment under Sections 506(d), 510(b)(5), 510(d)(2), and 522(e) of the Act.

(b) Section 771.21(e)(2)(ii) requires delineation of areas that were mined after the date of enactment, but prior to the effective dates of the interim regulatory program performance and design standards. This is necessary to distinguish operations from those which qualify for the benefits discussed above under Section 771.21(e)(2)(i). Delineation according to the date of either May 3, 1978 or January 1, 1979, is necessary to identify those operations which, if ceased prior to those dates are not subject to the interim or permanent regulatory program design and performance standards. As commenters noted, the proposed specification of February 3, 1978, as a critical delineation date was not appropriate. Instead, the dates of May 3, 1978 (generally applicable), or January 1, 1979 (the date for expiration of the small operator's exemption under 30 CFR 710.12) were used in the final rules.

(c) Section 771.21(e)(2)(iii) requires further delineation of operations areas, for the period from the effective date of the interim regulatory program's design and performance standards until the approval of the permanent regulatory program. Facilities which constitute existing structures constructed during that period may qualify for special treatment under the permanent regulatory program. (*See* 30 CFR 701.11(d)–(e)).

(d) Finally, delineation is required for those areas which will be affected during the permanent regulatory program. This is based on the generally effective date of design and performance standards of Subchapter K, the first date upon which a permanent program permit must be acquired. (*See* 30 CFR 701.11(d)).

(e) Delineation is required under Sections 102, 201, 501(b), 502, 503, 504, 506, 507, 508, 510, 515, 516, 522, and 701 of the Act, so that the public and the regulatory authority can clearly distinguish among the various phases of regulation in reviewing applications and so that the permittees responsibilities for compliance will be clearly stated, if the application is approved.

§ 771.25 Permit fees.

1. Authority, basis, and purpose for this section were explained at 43 F.R. 41689 (Sept. 18, 1978). The final rule has been modified to track the language of Section 507(a) of the Act more closely and to serve as the minimum criteria for State and Federal programs. In the proposed rules, those criteria were set forth at 30 CFR 731.14(h)(2) and 732.15(a)(3)(ii).

2. Several commenters suggested that permit fees be either increased, reduced, or eliminated under State programs. One commenter suggested amending the wording to conform exactly to Section 507(a) of the Act. That section provides for a fee less than or equal to the regulatory authority's cost of application review and administration and enforcement of the permit. OSM agreed with this commenter. Section 771.25 was amended to include the exact language of Section 507(a). The remaining comments on Section 771.25 have been rejected. Readers are referred to the OSM regulatory analysis for a discussion of alternatives considered.

§ 771.27 Verification of application.

Authority, basis, and purpose for this section were discussed at 43 *F.R.* 41689 (Sept. 18, 1978). A commenter on this section suggested that it be deleted as unauthorized under the Act and as too onerous for the industry to comply with, in view of the amount of data required. This comment was rejected.

Section 771.27 is authorized under Sections 102, 201(c), 501(b), 506, 507, 508 and 510 of the Act, and is an important tool for the regulatory authority to insure that accurate information is provided by the applicant in seeking to establish its entitlement to conduct operations. It is similar to requirements for SEC reporting under the Federal securities laws and to filing requirements under the NPDES permit system. Moreover, it does not require an absolute guarantee by the individual executing the verification, but rather imposes a due diligence standard for the official to insure that the application is true and correct to the ". . . best of (his or her) information and belief."

PART 776—GENERAL REQUIREMENTS FOR COAL EXPLORATION

Authority, basis, and purpose for Part 776 were explained, in general, at 43 *Fed. Reg.* 41689–41691 (Sept. 18, 1978). Section 776.1 specifies the legal effect of Part 776 and explains the applicability of the Part. First, it specifies that Part 776 constitutes the minimum requirements mandated under Section 512 of the Act, by which the Secretary will decide to approve or disapprove State and Federal program components for coal exploration. Second, it specifies that Part 776 will be applicable to coal exploration outside the permit area.

A few commenters felt that Part 776 should not apply to coal exploration in areas that are already covered by permanent regulatory program permits issued pursuant to Title V of the Act and Parts 771 and 778–786 of Subchapter G.

Once a person has received a permanent regulatory program permit to conduct surface mining and reclamation operations, the permit terms and conditions control the performance of the operation. Therefore, the procedures of Part 776 would be unnecessary for exploration conducted within the permit area. Exploration within a permit area should have been planned as an integral part of the surface coal mining and reclamation operations, not handled in a piecemeal, separate proceeding.

As a result, Section 776.1 was revised in the final rule so as to exclude exploration which occurs inside an active permit area. Those operations instead are to be regulated under Parts 771 and 778–786 of Subchapter G.

§ 776.3 Responsibilities.

This Section explains the responsibilities of both the industry and the regulatory authority under Part 776. Several commenters suggested that the proposed version of this Section be modified in Paragraph (a), to limit its applicability only to coal explorations which "substantially disturb the natural land surface." This suggestion was rejected as unnecessary because Section 776.3(a) merely requires persons seeking to conduct or already conducting coal exploration to comply with the rest of the provisions of Part 776.

As they appear in the final rule, the operative provisions of this Part are limited to a relatively simple notification system except for coal exploration which substantially disturbs the natural land surface. (see Section 776.1.).

§ 776.11 General requirements: Exploration of less than 250 tons.

This Section established minimum requirements for regulatory procedures to be followed by persons prior to conducting coal exploration involving the removal of less than 250 tons of coal, specifies compliance responsibilities for those persons with respect to the applicable performance standards, and requires appropriate public notification by the regulatory authority.

Section 776.11(a). As adopted, Section 776.11(a) requires any person before conducting coal exploration removing less than 250 tons from one specific area, to file with the regulatory authority a notice of intention to explore. Several comments were received which suggested that this paragraph be limited to apply the notice-filing requirement only to coal exploration which "substantially disturb the natural land surface." These comments were rejected. Under OSM's authority to issue regulations to carry out the purposes of the Act, OSM believes the requirement to file a notice of exploration is reasonable. It is based on the need to know where exploration is being conducted in order to determine if it will substantially disturb the natural land surface and adversely affect the environment. Furthermore, the requirement is not burdensome because it does not subject the person conducting coal exploration to the performance standards in 30 CFR Part 815 unless the exploration substantially disturbs the natural land surface.

Many commenters also suggested that the geographic area to which Section 776.11(a) would apply be narrowed from "... in any one location," as specified in the proposed rules, to only the area in which exploration is to be actually conducted. In response, the final rule was revised to apply the requirements for filing of a notice of intention to explore to "the area to be explored," to clarify that the exploring entity's obligation to file a notice occurs before entry upon the actual area of the land. However, the Office rejected the extreme of limiting the geographic scope of application of Section 776.11 to only areas where coal will be physically removed, as substantial disturbance to land may occur from actions incident to coal extraction, such as construction of roads and facilities and disposal of debris and waste.

Section 815.4 of the proposed rules specified that the notice of intention to explore would have to be filed with the regulatory authority at least 30 days before commencement of exploration. Several commentors objected to this as being unduly burdensome, arguing that the highly competitive nature of small-scale exploration requires that individual explorers be able to move quickly into the field before attracting other entities. Section 815.4 has been deleted in the final rules, and the Office, in response to the above comments, has decided not to provide for any similar specific mandatory time period in Section 776.11(a). The amount of lead time required for filing of notices of intention to explore will be left to individual regulatory authorities to decide.

Section 776.11(b). (1) One commenter suggested that reclamation plans be required for all exploration operations and that a new paragraph be added to Section 776.11 specifying this requirement. This comment was rejected. Section 512 of the Act does not require prior regulatory authority approval of a reclamation plan for a coal exploration operation when less than 250 tons of coal will be removed. The notice of intent to explore is to provide information for the regulatory authority to determine whether close surveillance of the actual operation will be needed in the field, not to form the basis of a preexploration decision by the regulatory authority.

(2) Another commenter felt the regulatory authority should be expressly provided with the authority to halt exploration when an inadequate notice of intention is filed, by addition of a new paragraph to Section 776.11(a). This comment was rejected because specific enforcement remedies are covered in Subchapter L of the regulations. Adequate provision is made in that Subchapter for the issuance of notices of violation and, if necessary, cessation orders, in the event of noncompliance with the exploration regulations.

(3) A number of comments were received on the specific elements of the notice of intention to be required under Section 776.11(b). In reviewing these comments, the Office carefully considered the fundamental purposes of the notice requirement. These are, first, to provide the regulatory authority and the potentially affected members of the public with notice of how, when, where, and by whom exploration removing less than 250 tons of coal will be conducted. With these essential elements of information, the regulatory authority and interested members of the public can check, if necessary, the conduct and completion of the exploration activities to ensure that they are reclaimed as required by Section 512(a) of the Act and Part 815 of Subchapter K.

(4) Some commenters argued for greatly expanded items of information in notices under Section 776.11(b), which, if adopted, would have required notices to essentially contain the data and plans required for reclamation plan portions of mining permits under Section 508 of SMCRA. These comments were not accepted, for the most part, because such a high level of detail is not necessary to fulfill the fundamental purposes of the notice requirement described above. However, it was decided to revise Section 776.11(b) in the final rule to require that the notice specify certain identification data with respect to the persons conducting exploration, so that those persons can be contacted during or after exploration if reclamation practices are not successful.

(5) One commenter objected to use of the term "precise" as to the type of description required of the area to be explored under Section 776.11(b)(3). This comment was rejected. Precision is needed because exploration areas may be quite small and, therefore, not readily identifiable on an ordinary 1:24,000-scale topographic map unless appropriately qualified with a textual description of the area.

(6) Another commenter objected to requiring the notice to contain an explanation of the exploring entity's legal right to enter upon and conduct exploration within the lands involved, arguing, first, that this is not required by the Act and, second, that this information needs to be kept confidential. No supporting information was presented to demonstrate the commenter's broad claim of confidentiality. The Office decided to modify the final rule in response to this comment, but not to delete the requirement entirely. Section 776.11(b) (5), as adopted, requires the person seeking to con-

duct exploration to explain the right of entry only if that person does not own the surface of the lands involved. The need for this information is supported by Section 102(b) of the Act, which requires protection of the rights of surface owners of land and other persons with a legal interest in land and appurtenances. With this information, the regulatory authority can identify the surface owner of the exploration area, if necessary, to ascertain if reclamation was properly conducted. Regarding the threat to competitive interests of the explorer, Section 776.17 provides for adequate safeguard against unwarranted disclosure of information.

(7) Several commenters recommended deletion of the requirement that the notice contain a description of the measures that the exploring entity will take during exploration to protect the environment, on the grounds that this was not authorized by the Act. The Office rejected these comments. Section 776.11(b)(6) of the final rules is authorized under Section 102, 201(b), 501(b) and 512 of the Act, both to encourage the exploring entity to adequately prepian its exploration activities to protect the environment and to provide the regulatory authority with sufficient information to decide if field inspection of the exploration is necessary for determining compliance with the requirements of Part 815. The Office does not believe that this requirement is inconsistent with Section 512(a) of the Act. The regulation merely leaves to the exploring entity the duty to ensure adequate planning of exploration before its commencement.

Section 776.11(c). The requirement that the regulatory authority make notice of intention to explore publicly available received substantial comment. Some commenters supported this requirement as necessary to inform landowners and the public of the conduct and location of coal exploration that could adversely affect their interests. In addition some of these commenters suggested additional requirements, including newspaper and mail notification by the regulatory authority of receipt of notices. Industry commenters, on the other hand, objected to making notices publicly available at all, arguing that this would harm the competitive interests of exploring entites and that it was not authorized by the Act.

After consideration of all comments, the Office decided to adopt the requirement of public notification without modication from the proposed rule. This requirement is authorized under Sections 102, 201(c), 501(b), 512 and 517(f) of the Act, to provide for an adequate level of public participation in the permanent regulatory program. Under Section 517(f) of the Act, a general rule is established for information obtained by the regulatory authority in administration of programs under Title V of the Act, including Section 512(a). As such, documents obtained under Section 512(a) of the Act are ordinarily to be made available to the public for inspection and copying under Section 517(f) of the Act. In addition, the Office is required to ensure under Section 102(i) of the Act that adequate provisions are made for public participation in the enforcement of regulatory programs. To foster the purposes of the Act, as supplied by Section 102(i), the Office has decided that public availability of notices received by the regulatory authority is to be required as an aid to public participation in enforcement of the permanent regulatory programs.

Regarding protection of the competitive interests of exploring entities, the Office has determined that Section 776.11(d), through cross-reference to Section 776.17, provides for sufficient protection. It is noted that no commenter supplied any data tending to show that the public-availability requirement of Section 776.11 would, in fact, harm competitive interests. Similarly, conclusory claims that existing state laws already adequately regulate coal exploration in this regard were also rejected as unsubstantiated.

Regarding additional public notification by newspaper and mail, the Office has decided to leave that decision to the discretion of individual regulatory authorities, because of the wide variation among the States in the intensity of coal exploration. Given that variation, it was decided that newspaper and/or mail notice may be necessary in only some States, where the level of exploration is high.

Section 776.12(a)(3). A commenter objected to the requirement of Section 776.12(a)(3) that each application for approval of exploration contain a narrative description of the geology, vegetation, and existence of threatened or endangered species and their critical habitats in the area to be explored. This commenter reasoned that, given the definition of "coal exploration" in 30 CFR 701.5, collection of the data necessary to fill out the application would itself be subject to prior approval as "coal exploration." This comment was not accepted, because the type of information objected to is important in providing the regulatory authority with a sufficient baseline for assessing the impact of the proposed exploration. Further, these items can be obtained without physical disturbance of the area to explored, through general geology maps and texts of the general vicinity, vegetation data collected by surface reconnaissance, and information concerning threatened and endangered species from the U.S. Fish and Wildlife Service. *See., e.g.,* USEPA, 1976, Erosion and Sediment Control, Vol. 1 at 74-77.

Section 776.12(a)(4). A commenter suggested that some latitude be made under Section 776.12(a)(4) for circumstances when the actual owner or claimant is not determinable, because of title defects or irregularities in the claim of titles, by addition of the phrase "if reasonably ascertainable." No change has been made in the regulations, because the added wording is believed to be unnecessary. Obviously, if defects or disputes exist, the applicant can submit only as much information as is reasonably available.

Section 776.12(a)(5). Some commenters suggested that Section 776.12(a)(5) be amended to add archeological resources to the list of items to be disclosed on the map of the exploration area, noting that these are significant resources afforded protection under the Act. (Sections 102, 507(b)(13), 522(a)(3)(B)); 552(e); and the National Historic Preservation Act of 1966 (16 U.S.C. Secs. 470 et. seq.) from the adverse effects of mining and are required to be disclosed in mining permit applications. The Office accepted those comments and modified the final rule accordingly.

A commenter argued that Section 776.12(a) was unduly restructive in requiring advance prediction of the location of drill holes, which may be impossible to specify before actually commencing drilling. No change was made to the regulation, because it does not require a "precise" identification of each drill hole. Rather, the general location and number of drill holes within the area would satisfy the requirement of the regulation.

Section 776.12(b). This section provides for notice and opportunity for the public to comment upon applications for approval for coal exploration, to ensure that adequate public participation is afforded in the review of these applications under Section 102(i) of the Act. As suggested by several commenters, an incorrect cross-reference to Section 781.77 in the proposed rule was deleted. Several other comments were received on this paragraph.

1. Some commenters urged that the public-notice requirement be made more detailed and that they track the requirements of Section 786.11 relating to mining permits as closely as possible. Others wanted public notices deleted entirely. Many commenters also pointed out that the regulations, as proposed, were unclear in certain particulars, such as who should post the public notice, where the notice should be posted, who could file, and when the comments could be filed.

Public notice and comments have not been deleted, because involvement of the public under the authority of Section 102(i) of the Act is an important component of ensuring thorough review of applications by the regulatory authority. (See S. Rep. 95-128, 95th Cong., 1st Sess. at 59 (1977).) Nor were major additional procedures added, because the Office determined that exploration, which is ordinarily on a smaller scale than mining, need not be subjected to as wide an area of public participation as mining permits.

Some clarification was made, however, in response to the comments. First, a reasonable time limit was provided for the posting of the public notice. Notice is to be posted by the applicant, rather than the regulatory authority, because the applicant is ordinarily in closer proximity to the immediate local area where notice will be posted.

2. *Section 776.12(b)(2).* Some commenters requested that Section 776.12(b)(2) provide for a specific time limit on the submission of comments. The suggestion was not accepted, because of the wide variation in the number of explorations in particular States. Therefore, the time limit will be left to the discretion of the regulatory authority to decide on a case-by-case basis.

3. *Section 776.12(b)(3).* Several commenters recommended that Section 776.12(b)(3) be revised to limit the right to file written comments on the application to persons "who are or may be adversely affected," on the model of Section 513(b) of the Act. Although the "written approval" required by Section 512(d) is not intended to be a permit, the Office agreed that the right to file written comments on an exploration application should not extend to parties beyond what is authorized on permit reviews. Therefore, the comments were accepted.

§ 776.13 Applications: Approval or disapproval of exploration of more than 250 tons.

This Section requires the regulatory authority to act on applications for exploration and provides the criteria by which the application is to be approved or disapproved.

1. A commenter suggested deleting the entire Section, arguing that approval of the State program is all that is necessary to ensure that the regulatory authority will administer Section 512(d) of the Act. However, minimum requirements are necessary to implement Section 512(d) of the Act and to ensure that the purposes of the Act (Sections 102(a)(d), 102(k)) are furthered. It was, therefore, decided to retain this Section substantially as proposed.

2. A commenter's suggestion that the title to this Section be clarified as to its applicability only to coal exploration operations of more than 250 tons was accepted.

3. Several commenters suggested that a "reasonable time" be more explicitly stated for the regulatory authority to act upon a completed application. These suggestions were not accepted because of the wide variation among States in the number of explorations and consequent variability in workloads for reviewing applications.

4. Several comments were submitted regarding the use of the word "may" in Section 776.13(b) and requesting that potential arbitrariness in use of this word be eliminated by replacing it with "shall." These comments were accepted.

5. A commenter questioned whether protection of critical habitats of threatened or endangered species should be required during coal exploration.

Sections 101, 102, 512, and 515 of the Act make specific reference to protecting environmental values, including fish and wildlife habitats. Although coal exploration operations may affect small areas, the special categories of the environment (habitats) for which protection is authorized can be similarly small areas. Further, the Endangered Species Act and the U.S. Fish and Wildlife Service regulations require that these habitats be protected under statutes, such as the Act, administered by the Secretary. This comment was accepted. (See also, the preamble discussions to sections 770.12(c) and 779.20.)

§ 776.14 Applications: Notice and hearing for exploration of more than 250 tons.

This Section provides for the procedures for the regulatory authority to follow, once a decision has been made under Section 776.13 to approve or disapprove the application, in order to notify the applicant and the public of its decision. This Section also provides that the decisions of the regulatory authority are to be subject to appropriate opportunity for administrative adjudicatory and judicial reviews.

1. A commenter questioned whether the regulatory authority should be specifically empowered to modify coal exploration applications. This comment was not accepted because power to approve or disapprove implies the power to modify an application. Any application which is disapproved could be modified and resubmitted under Section 776.13(c).

2. Several commenters questioned whether it should be required that government officials receive personal notice of a regulatory authority decision on coal exploration applications, rather than having to depend on newspaper advertisements. These comments were accepted, because local governments should be provided with notice in all cases of exploration, to ensure that their property, public roads, and land-use control scheme is protected and coordinated as to large-scale coal exploration.

3. Several commenters questioned whether there should be an opportunity for a hearing on the approval or disapproval of coal explorations over 250 tons. As proposed, Section 776.14 conferred discretion to the regulatory authority to hold a hearing after approval or disapproval of exploration applications. Under the due-process requirements of the 5th and 14th amendments to the United States Constitution, the Federal and State governments can only take property or deprive individuals of their due-process rights if opportunity for an adjudicatory hearing is afforded on particularized, factual determinations. Furthermore, the Federal Administrative Procedure Act (5 USC 554) and most State laws provide for a similar right to a hearing. Therefore, any person adversely affected by the decision of the regulatory authority on an exploratory application must be given an opportunity for a hearing. The type of hearing to be afforded is specified in Part 787, which itself has been modified in the final rule to account for exploration application approval and disapproval hearings.

§ 776.15 Coal exploration compliance duties.

This Section establishes the compliance responsibilities of persons seeking to conduct or already conducting coal exploration under the permanent regulatory program. Suggestions by commenters that this Section be limited to those explorations which substantially disturb the natural land surface were accepted, in part, as Section 512(a) of the Act limits the scope of application of the performance standards of the Act to such operations. However, 776.15(b) is applicable to all coal exploration, for the reasons explained in the preamble to section 776.11.

§ 776.17 Public availability of information.

This Section provides for standards and procedures regarding the extent to which information submitted to the regulatory authority under Part 776 is to be made publicly available.

1. A number of commenters objected to the wording of Paragraphs (a) and (b) of this Section, arguing that the exploring entity, not the regulatory authority, should determine what information is to be kept confidential. These commenters said that those determinations were neither authorized

to be entrusted to the regulatory authorities under the Act, nor could the regulatory authorities be completely trusted not to divulge some confidential information. Some commenters also argued that disclosure of any information regarding exploration would harm the competitive rights of exploring entities.

Section 512 of the Act must be viewed as a part of the entire regulatory scheme which Congress desired to exist under the Act. That scheme provides for adequate public participation and public availability of information (Sections 102(i) and 517(f) of the Act). Ordinarily, information obtained by the regulatory authority is to be publicly disclosable, including that obtained through regulation of coal exploration. Provisions against disclosure, therefore, such as Section 512(b) of the Act, constitute an exception which is to be narrowly construed.

No data were submitted to substantiate commenters' concerns that determinations of confidentiality or the release of any information will harm competitive interests. Moreover, an objective standard for determining confidentiality requests, as opposed to a subjective standard based purely on the desires of the person submitting information, is necessary to foster the purposes of the Act to protect the general public and the environment. The Office believes, on the basis of these principles, that Section 776.17 strikes a proper balance between public interests in disclosure of relevant information and protection of competitive rights. Moreover, the addition of the opportunity for a prior hearing on the disclosure of information should ensure against possible mistaken releases of data entitled to confidential treatment.

2. A related comment suggesting expansion of the categories of confidential information protectable under Section 776.17 to include any information "affecting marketability of land or mineral rights" was also rejected, because Section 512(b) of the Act is limited to information which if disclosed relates to trade secrets, or would harm competitive rights. Expansion beyond this category was not shown to be needed by the commenter, nor does the Office believe that the excepting language of Section 512(b) should be read more broadly.

3. Several commenters suggested modifying Section 776.17 to provide the person submitting the information to have protection from unwarranted disclosure of confidential information through notice and opportunity for a prior hearing on proposed disclosures.

Section 512(b) of the Act specifies that information submitted to the regulatory authority as confidential shall not be available for public examination. Section 517(f) of the Act specifies that information obtained shall be immediately available to the public. This potential conflict places the regulatory authority in a position of ascertaining if the information submitted pursuant to Section 512 is of the type specified as confidential. However, information that is entitled to confidential protection to prevent damage to a person's business, competitive interests, such as the type of information covered by Section 776.17(b)(2), is subject to the requirements of due process.

Due process requires that a person not be individually deprived of individual property without some opportunity for a hearing. The divulgence of information in the possession of the regulatory authority which is entitled to confidential protection under Section 776.17(b)(2) must, therefore, be protected by providing for advance notice to and opportunity to be heard by the person requesting that the information be protected. As a result, a new Paragraph (b)(3), was added to the final rules.

PART 778—SURFACE MINING PERMIT APPLICATIONS: MINIMUM REQUIREMENTS FOR LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Introduction

Part 778 provides the minimum requirements for legal, financial, compliance and general non-technical information for surface mining activities applications. Information submitted in permit applications under Part 778 will be used primarily to enable the regulatory authority and interested members of the public to ascertain the particular nature of the entity which will mine the coal and those entities which have other financial interests and public record ownership interests in both the mining entity and the property which is to be mined. In addition, certain other non-technical information needed for processing and approval or disapproval of the application is required.

The basis and purpose of Part 778 was set forth, in general, at 43 F.R. 41691-41693. Most of the comments on Part 778 apply also to Part 782 and, when changes were warranted in both parts based on comments addressed only to Part 778, corresponding changes were also made in Part 782. (Part 782 concerns minimum requirements for legal, financial, compliance, and related information for applications for underground mining activities.) Some minor editorial changes have been made throughout this Part. Many comments were received on Part 778, and some changes in the regulations have been made. Paragraphs 778.5 and 782.5, Definitions, have been deleted since the definition there has been moved to section 770.5 in the final rules.

§ 778.13 Identification of interests.

Authority for this Section is Sections 102, 201(c), 503, 504, 507, 508, 509, 510, and 515 of SMCRA. It should be noted that some amplification of the coverage in Sections 778.13 (b) and (d) will be necessary in particular cases, when the actual operator is to be a different person from the applicant. This information will aid the regulatory authority in determining the past compliance history of the person actually doing the work. Section 510(c) of the Act requires this determination. Even if the applicant had no previous violations, the permit could be denied if the actual operator had a history of noncompliance with the Act or other air or water environmental protection statutes.

1. Section 778.13(a): Several objections were received that too much detail was required on both applicant ownership and land-to-be mined ownership. On the other hand, one commenter felt more detail would be necessary to reveal complex ownership patterns. The comments were rejected. The requirements for details of ownership are specifically stated in Section 507(b) of the Act. Ample authority exists in section 510(c) of the Act to deny permits where the operator or applicant is controlled by a parent company that has a willful pattern of violations of the Act.

2. Commenters objected to furnishing telephone numbers for all of the persons mentioned in 778.13. Since rapid communication by telephone would be required only for persons immediately involved in the operation, Paragraph 778.13(a) was modified to require the telephone numbers only for the applicant, operator, and resident agent.

3. Several commenters objected to the requirement for the listing of equitable, as well as legal owners, of record in subparagraph 778.13(a)(2). The reasons given were that the equitable owners were not required by the Act and the determination of equitable owners might be difficult or impossible in some cases. These comments were rejected. The equitable owner of record of the property to be mined needs to be named in the application in order to enable the regulatory authority to easily locate these owners, if their interests would be adversely affected by the proposed operations, and, in the event of a violation of applicable regulations during the mining process, to locate potentially responsible parties. This requirement should not pose an additional burden on ap-

plicants, as equitable owners of record can be identified by the same process of searching public property records at the same time as for legal owners of record. It is also noted that the applicant should try to identify "equitable owners of record" to insure that rights to mine coal are being obtained free and clear from equitable claim to minerals.

The Office believes it has legal authority to require this information under Sections 102(a), 201(c), 507, 508, 510(b)(c), and 515 of the Act. Section 102(a) of the Act requires protection of "society" from adverse effects of coal mining. Further, Section 102(b) of the Act requires protection of all persons with "legal interests" in land from adverse effects of coal mining. An "equitable owner of record" is a "person with legal interests" within the meaning of the Act. *Black's Law Dictionary* at 1259–1260 (1956 ed.). Because Sections 102 (a) and (b) of the Act protect equitable owners of record, subparagraph 778.13(a)(2) is lawfully issued under section 201(c)(2) of the Act.

4. Section 778.13(b): Some commenters wanted to limit this subsection to operations in the State, rather than the entire United States. These comments were rejected because Section 507(b)(4) of the Act expressly requires that the applicant identify the operations "within the United States," not just the State in which the application is filed.

5. Sections 778.13(d) and 782.13(d): Several commenters objected to the listing of previous coal mining permits held by the applicant. The reasons given were that some of the information required might be unavailable or have little present relevance. The comment was accepted by limiting the information requirement of Sections 778.13(d) and 782.13(d) to permits issued after 1970.

Some commenters wanted to limit Section 778.13(d) to operations in the State, rather than the entire United States. These comments were rejected, because Section 507(b)(3) expressly requires that the applicant list current or previous coal mining permits in the United States, rather than just the State in which the application is filed.

One commenter wanted to limit the statement of any current or previous coal mining permits to "surface" coal mining permits. This comment was accepted, since this phrase more closely tracks Section 507(b)(3) of the Act. By the definition of surface coal mining operation in Section 701(28) of the Act, it is clear that both surface and underground activities are intended to be included by this requirement.

One commenter wanted to delete the phrase "and by any person identified in paragraph (b)(3) of this Section" in Section 778.13(d), since it was not explicitly required in the Act. This comment was rejected, as those entities are persons who are in a position to exercise significant control over the conduct of an applicant's business affairs and who could be responsible for violations of law incurred by the applicant, for which the applicant is responsible under Section 510(c) of the Act. As a result, information about those persons' histories of compliance with permit obligations would be relevant and useful to the regulatory authority. Because that information would be in the possession of persons who would be closely associated with the applicant, requiring the applicant to produce that information should not pose a significant burden on the industry.

6. *Sections 778.13(e) and 782.13(e).* Several commenters objected to the requirement for listing all owners of property contiguous to the permit area, rather than owners of surface property and of coal mineral rights. The comments were rejected, since Section 507(b)(2) of the Act requires identification of owners of all property next to the proposed permit area.

7. *Section 778.13(f).* One commenter objected to supplying the Mine Safety and Health Administration's MSHA identification number for the mine. This comment was rejected, since the information is needed to aid the regulatory authority in coordinating review of the permit application with the MSHA, so that any potential conflicts between the regulatory requirements of the Mine Health and Safety Act and the SMCRA could be resolved. In addition, identification of the MSHA number will be important in the case of a proposed new coal mine which might constitute a "new source" under the Clean Water Act. 33 U.S.C. 1251, *et seq.* See 44 Fed. Reg. 2587 (January 12, 1979). The name of the mine and the mine MSHA I.D. number are, therefore, required under Sections 102, 201(c), 503, 504, 507, 508, and 510 of SMCRA, to insure that an effective permit system is implemented.

8. *Sections 778.13(g) and 782.13(g).* New subparagraphs were added as Section 778.13(g), that were from Sections 779.12(c) and 783.12(c) in the proposed rules. Requirements for information on interests, options, and pending bids on lands more logically belong with the legal and financial sections of the applications, rather than the general environmental resources information.

Commenters objected to the requirements for listing various interests in lands within mine plan areas. The reasons given were that the requirements exceeded the authority of the Act, that confidential information would be disclosed, and only information on lands contiguous to the permit area was required.

The basic justification for the requirement is contained in the preamble to Section 779.12 (43 Fed. Reg. p. 41694); however, limitation to contiguous lands is more consistent with Section 508(a)(11) of the Act. Confidentiality of the information is adequately protected by 30 CFR 786.15.

Several commenters objected to the phrase "options or pending bids on such interests" as being unauthorized by the Act. Section 508(a)(11) specifically requires this information, so the comments were rejected.

§ 778.14 Compliance information.

Authority for this Section is, in general, Sections 102, 201(c), 501(b), 503(a), 504, 507(b), 508(a), 509, 510, and 515 of the Act. The purpose and basis for this section was generally discussed at 43 Fed. Reg. 41692 (Sept. 18, 1978).

Some amplification of the coverage in Section 778.14 will be necessary for the situation when the actual operator is to be a different person from the applicant, as is explained above in the preamble to Section 778.13. Section 510(c) of the Act specifies that no permit shall be issued to an applicant after a finding that ". . . the applicant or the operator . . ." has a demonstrated pattern of willful violations. This information is necessary so that the regulatory authority can make a determination concerning the past compliance history of the person actually doing the work.

1. *Scope of laws involved*

Several commenters suggested that the compliance information required by Sections 778.14(c) and 782.14(c) should be restricted only to operations of the applicant in the State where the application is made. These comments posed related suggestions to proposed Sections 786.15(g) and 788.12(c), which are the substantive rules designed to implement the first portion of section 510(c) of the Act.

In response to these comments, the Office has made several modifications to the final rules in Sections 778.14(c), 782.14(c), 786.17(c), and 786.19(g), which will more closely follow the Congressional intention for Section 510(c) of the Act. Following is the Office's analysis of the comments received on the proposed rules and explanation of their disposition.

One comment argued that Section 510(c) of the Act is limited in application to Federal programs only. This argument is not substantiated in the comments and is without merit. Indeed, as that commenter itself recognized, Section 510(c) can be applied to State programs, although (says that commenter) only for violations by the

applicant of that State's laws. In any event, Section 510(c) is not limited as to the type of program under which it should be applied. Section 510(c) is one of four paragraphs of the section of the Act which establishes the criteria for permit denial/approval decisions by the regulatory authority. As Section 510(a) indicates, decisions under either a State program or Federal program are to be made in accordance with the Act, which includes Section 510(c). Second, Section 510(c) on its faces applies to the "applicant" without any indicated qualification as to whether a State or Federal program is involved. Third, Section 510(c) applies ". . . where the schedule or other information available *to the regulatory authority* . . .," without limitation as to the type (i.e., Federal or State) of regulatory authority involved. "Regulatory authority" is defined at Section 701(22) of the Act to include both State and Federal programs. Fourth, Section 510(c) prohibits issuance of the "permit," without limitation as to the type of permit involved. "Permit" is defined at Section 701(15), to include permits under both State and Federal programs. The words of Section 510 thus clearly apply all provisions of Section 510(c) to both State and Federal programs. In such cases, the ordinary meanings of the words of the Act are to be given full and complete effect. *Burns* v. *Alcala*, 420 U.S. 575 (1975). Therefore, Sections 778.14(c), 782.14(c), 786.15(g), and 788.12(c) have been modified to narrow their coverage to Federal programs only.

Some commenters contend that Section 510 of the Act applies only to violations of Federal laws and, therefore, not to violations of laws administered by agencies in other States. They asserted that, because Congress failed to expressly list State laws in the phrase "violations of this Act, any law, rule, or regulation of the United States pertaining to air or water environmental protection," Congress chose to exclude coverage of laws administered by State governments. A close reading of this portion of Section 510(c) reveals, however, that Congress did intend to include some laws enforced by State governments.

The critical phraseology of Section 510(c) that these commenters point to is "violations of this Act and any law, rule, or regulation of the United States, or of any department or agency in the United States," contending that this covers only Federal laws administered by Federal agencies because of the use of the term "United States." This argument, however, ignores completely the phrase "department or agency *in the United States.*" (Emphasis supplied)

The phrase "in the United States" is construed by courts to mean physically located within the United States. *See* e.g., *United States v. Neptune*, 337 F. Supp. 1028, (D. Conn.) Therefore, the preferred way to read section 510(c) is to construe "department or agency in the United States "to mean any governmental department or agency" physically located in the United States, which would include State and local governmental entities.

The commenters suggested construction of Section 510(c) would also render meaningless the phrase "department or agency in the United States," a result which is always to be avoided. *Ziegler Coal Co.* v. *Kleppe*, 536 F. 2d 398 (D.C. Cir., 1976), cert. den., 411 U.S. 917 (1973). If Congress had intended to apply Section 510(c) to Federal laws administered by Federal agencies only, it could have limited its choice of words to "violations of the Act or of any law, rule, or regulation of the United States" and excluded the words "or of any department or agency in the United States," since the former would have covered, by reference to "law, rule, or regulations of the United States," all Federal laws. Instead, Congress enacted Section 510(c) to cover violations of laws, rules, or regulations of the United States (e.g., Federally administered) and of "laws, rules, regulations . . . of any department or agency in the United States," thereby clearly intending to cover a body of law in addition to Federal law administered only by Federal agencies.

In summary, the structure of Section 510(c) and accepted principles of statutory construction reveal that Section 510(c) of the Act was intended to cover violations of the Act and of air or water environmental protection statutes administered by both Federal and State governments.

On the other hand, it appears from the legislative history that Congress did intend that Section 510(c) would apply to violations of any State environmental protection laws which implement Federal environmental laws. The relevant portion of Section 510(c) originated in the 1974 version of the House bill, H.R. 11500, and was the same as that finally enacted by Congress in 1977. Compare Section 209(e), H.R. 11500, H.R. Rep. No. 93-1072, 93rd Cong., 2d Sess. at 12 (1974), with Section 510(c). As the House reports through the years reveal, Congress intended that Section 510(c) apply to a "wide range" of violations of Federal environmental protection requirements. H.R. Rep. No. 93-1072, *supra*, at 82, 133; H.R. Rep. No. 94-45, 94th Cong., 1st Sess. at 45, 113 (1976); H.R. Rep. No. 94-1445, 94th Cong., 2d Sess., at 44, 115 (1976); H.R. Rep. No. 95-218, 95th Cong., 1st Sess., at 92 (1977). It is important to note that those "other Federal air and water environmental protection statutes," continually referred to by the House, are largely implemented through State adoption of laws which are enforceable as Federal laws.

For example, the Clean Air Act is implemented under State plans to control existing stationary sources of air pollution (Section 110, 42 U.S.C. Section 7410), new sources (Section 111, 42 U.S.C. Section 7411), hazardous air pollutant sources (Section 112, 42 U.S.C. Section 7412), and to prevent significant deterioration of air cleaner than the national ambient air quality standards (Section 127, 42 U.S.C. Section 7427). The provisions of these State law plans are, however, also Federal law and enforceable by Federal agencies and courts. Sections 113, 304, 42 U.S.C. Sections 7413, 7604; *Union Electric Co.* v. *EPA*, 515 F. 2d 606 (8th Cir., 1975), aff'd., 96 S. Ct. 2518 (1976); *Friends of Earth* v. *Carey*, 535 F. 2d 165 (2nd Cir. 1976); *Friends of Earth* v. *Potomac Electric Power Co.*, 419 F. Supp. 528 (D.D.C. 1976).

Parallel provisions prevail under the Clean Water Act (33 U.S.C. Section 1251 *et seq*). Non-point source pollution is to be controlled according to State plans which become Federal law when approved by the Administrator, USEPA, 33 U.S.C. Section 1288. Point source discharges are to be regulated under State laws approved by EPA for water quality standards (33 U.S.C. Section 1313) and permits (33 U.S.C. Section 1342). These State plans are enforceable as Federal law by Federal agencies and courts. 33 U.S.C. Sections 1319, 1365; *EPA* v. *California*, 426 U.S. 200 (1976); *United States Steel* v. *Train*, 556 F. 2d 822 (7th Cir. 1977); *Montgomery Environmental Coalition* v. *Fri.*, 366 F. Supp. 261 (D.D.C. 1973). See also *Dwyer* v. *City of Ann Arbor*, 261 N.W. 2d. 231 (Mich. Ct. of Appeals, 1977).

Similarly, the Act's State programs, while adopted in the first instance by the States, will also become Federal law when approved by the Secretary of Interior, being promulgated as Federal regulations and enforceable as such in the United States courts. Section 520(a) *SMCRA;* 30 U.S.C. Section 1270(a).

Therefore, although the House Reports relating to the Act evidence Congressional intent to apply Section 510(c) to violations of Federal law, those laws would include State laws which are passed to implement Federal environmental protection statutes and thereby are incorporated into Federal law. Further, this type of State-administered law is also "laws, rules, and regulations . . . of any department or agency in the United States" which, as explained above,

Congress clearly intended to include within the scope of Section 510(c) of the Act. OSM's regulations implementing Section 510(c) should, therefore, include violations of those State laws, and regulations adopted under Federal air or water environmental protection standards.

In addition to contentions about the meaning of Section 510(c) of the Act itself, the commenters also raised two additional objections to the proposed rules on legal grounds. First, they argue that, to require the State in which a permit application is filed to enforce the law of another State, by refusing to issue the permit on the basis of violations by the applicant of the other State's laws, would be unconstitutional under the Commerce Clause of the United States Constitution. Those commenters cited neither supporting case law, nor detailed legal rationales. Further where, as in enacting Section 510(c) of the Act, Congress itself acts under the Commerce Clause, the courts accord it broad latitude to impose pre-conditions to engaging in business. *American Power Light Co. v. SEC*, 303 U.S. 419. There would appear to be no constitutional barrier under the Commerce Clause to requiring an applicant for a mining permit to establish first that it is effectively abating violations of important environmental protection laws at other mining operations under its control.

The second legal argument raised by the commenters, aside from those directly relating to Section 510(c) of the Act, is that some States have "no authority" to withhold permits for violations of other States' laws. Assuming that these comments are intended to mean that some States do not presently have State laws which would authorize their regulatory authorities to implement Section 510(c) of the Act, these comments were rejected, because Congress, of course, clearly anticipated that the States might have to change existing laws in order to qualify for State program approvals. *See* Sections 102(g), 201(c)(9), 503 of the Act.

Several commmenters argue against any adoption of regulations to implement Section 510(c), of the Act, based on complaints of the administrative inconvenience to State regulatory authorities to implement the Office's regulations under State programs.

One commenter objected that the proposed Office regulations would require the State regulatory authority to hold hearings on violations of laws other than those it directly administers. This contention may be true for a small number of cases, as due process would certainly require that the permit applicant be provided at some point with notice and opportunity for a hearing to contest an allegation of a violation of law. Thus, to the extent that the applicant has been provided with prior or contemporaneous notice and opportunity for a hearing by the department or agency responsible for a violation notice, the regulatory authority reviewing the permit application need not itself provide another such opportunity.

For example, if a permit application to the Kentucky Department of Natural Resources is being denied a permit for a violation notice issued by West Virginia's DNR for the applicant's coal mine in West Virginia, Kentucky need not provide a hearing if the West Virginia DNR offered one on that violation notice. Sections 778.14(c) and 782.14(c) would require the applicant to include in the permit application the documentation necessary for the regulatory authority to determine whether opportunity for a hearing had been available to the applicant on a violation notice listed by the applicant.

As Federal and State agencies enforcing environmental law routinely grant hearings in enforcement of these laws, it can be expected that in only a limited number of cases will an applicant subject to Section 510(c) of the Act be entitled to a hearing before the regulatory authority to contest the validity of a violation notice being used as the basis for refusing to issue a permit. In those circumstances, the adjudicatory hearing requirements of Section 514(c), of the Act and 30 CFR 787.11 would be available to protect the rights of the applicant.

Another objection raised by the commenters is that implementation of Section 510(c) of the Act under a State program will require, for violation of laws of another State, that the regulatory authority engage in an allegedly tedious task of comparing the provisions of the State program being administered by that regulatory authority with the requirements of the second State's laws to determine which State's laws are more stringent. This objection incorrectly assumed, however, that more stringent provisions of another State's laws are directly applied under Section 510(c), of the Act to the operations proposed by the applicant to be conducted in the State in which the application is filed and reviewed under Section 510(c). Section 510(c) and the Office's implementing regulations require only that provisions of other State laws be enforced to the extent that violations of those laws at mining operations in those other States be abated to the satisfaction of the other State. Section 510(c) does not require, and the Office's regulations do not imply, that the substantive provisions of those other State laws will be applied to the operations being proposed under the permit application.

The commenters also argued that implementation of Section 510(c) of the Act and the proposed regulations would unduly restrict a State regulatory authority's flexibility to permit coal mining in its State. To the extent that Section 510(c) requires a State regulatory authority to withhold a permit application because of violations of law at other mines controlled by an applicant. Congress has mandated circumscription of State flexibility and the Office has no alternative but to adopt its proposed implementing regulations.

Commenters contended that the proposed regulations would have absolutely prohibited issuance of permits. However, in limited circumstances the legislative history Section 510(c) allows for issuance of a permit, notwithstanding existing, uncorrected violations of law at other mines operated by the applicant. The Senate Committee reports contained the following cautionary instructions regarding versions of Senate bills identical to Section 510(c):

> It is not the intention of the Committee that an operator who is charged with the types of violations described in Section 510(c) be collaterally penalized through denial of a mining permit if he is availing himself, in good faith, of whatever administrative and judicial remedies may be available to him for the purpose of challenging the validity of violations charged against him. However, the Committee also does not intend that a permit applicant can avoid the purpose of Section 510(c) simply by filing an administrative or judicial appeal. It is expected that the regulatory authority will carefully examine those situations where an administrative or judicial appeal is pending in order to ensure to the fullest extent possible that such appeals are not merely frivolous efforts to avoid the requirements of Section 510(c). S. Rep. No. 94-28, 94th Cong., 1st Sess. 210 (1975). *Accord*, S. Rep. No. 95-128, 95th Cong., 1st Sess. 79 (1977).

This qualifying view of Section 510(c) was neither objected to nor endorsed in the general parts of the House Committee reports, but it was adopted in 1975 as the views of some members of the House Committee who supported the passage of the Act, H.R. Rep. No. 95-45, 94th Cong., 1st Sess. 157 (concurring views of Rep. Ruppe, Clausen, Lagomarsino). In such circumstances, it is reasonable to assume that the House did not object to the Senate's qualifying construction of Section 510(c).

Accordingly, OSM has chosen to modify the provisions of Sections 786.19(g) and 786.17(c) to allow for issuance of a permit where, despite outstanding uncorrected violations at other mines, a permit applicant is actively making good faith pursuit of administrative or judicial rights to appeal those violations. Appropriate

revisions to those sections have been made, with qualifications to prevent abuses. These revisions would allow for issuance of permits only as to pursuit of rights to direct appeals only and not as to collateral litigation, such as agency enforcement suits to abate the violations, since only the former would involve a "good faith attempt to pursue an appeal" under the Senate Committee Reports.

It is important to note that adoption of those revisions will place even more importance on the requirements of Sections 778.14(c) and 782.14(c), under which the regulatory authority would be provided with the documentation needed to make good faith appeal determinations necessary for issuance of permits.

Section 778.14(c). Commenters asked that information on violations of environmental laws be limited to those not abated at the time of permit application or those occurring within the past 12 months rather than the previous three years. These comments were rejected. Section 510(c) expressly requires that a three year history be provided.

Commenters also argued that the information required under Section 778.14 constitute self-incrimination or double jeopardy. These comments were rejected. The information required by Sections 507(b) and 510(c) of the Act is already a matter of public record and is to be supplied for a civil proceeding, to which the double jeopardy clause does not apply.

One commenter suggested that Section 778.14(c) be expanded to include all persons mentioned in Section 778.14(a), so as to make it consistent with the rest of Section 778.14. This comment was rejected, since the requirements of Section 778.14(c) are restricted by Section 510(c) of the Act, whereas Section 507(b)(5) of the Act specifies the requirements for the other paragraphs in Section 778.14.

The same commenter suggested that the phrase "pertaining to air or water environmental protection" be deleted in light of the Act's intent also to protect terrestrial resources. This comment was rejected since this specific subsection is restricted by Section 510(c) of the Act to violations pertaining to air or water environmental protection. Another suggestion by this commenter was to require the reporting of violations for any coal mining operations. Another commenter wanted the reporting applicable to surface mines only. The reporting of violations for any mine is the intent of this Section. The provisions of Section 516(d) specify that Title V of the Act applies equally to surface operations and to surface impacts incident to underground mining, except where it is necessary to accommodate distinct differences between surface and underground coal mining. Violations pertaining to air or water environmental protection, although they may differ as to the details, nevertheless give an indication of past behavior that could represent a demonstrated pattern of willful violations. To correctly identify a pattern of violations, it is immaterial whether they occurred at surface operations, underground operations or at some combination of the two.

Commenters argued that the information or compliance required by the regulations was not the brief statement authorized by Section 507(b)(5) of the Act. The comments were rejected because the requirements are as brief as possible still to obtain the information required by the Act. Compare *In re Surface Mining Regulation Litigation 1*, 452 F. Supp. 327, n. 8, (1978 D.D.C.).

§ 778.15 Right of entry and operation information.

Authority for this Section is Sections 102, 201(c), 501(b), 503, 504, 507(b), and 510(b)(6) of the Act. Sections 778.15 (a) and (b) were adopted principally to implement Sections 507(b)(9) and 510(b)(6) of the Act, requiring that the application contain a statement of the documents upon which the applicant bases the legal right to enter and commence mining operations on the permit area and a statement of whether that right is the subject of pending court litigation. In the final rules, the proviso in Section 507(b)(9) of the Act has been specified at Section 778.15(c). There has also been some change in wording throughout the section to correct the use of terms explicitly defined elsewhere in these regulations. In addition, the phrase "surface coal mining and reclamation operations" was replaced by the phrase "extract the coal by surface mining methods" to clarify that the requirements of this Section applies only to surface mining activities.

1. *Section 778.15(a).* Commenters asked that the requirements for certified documents be restricted or clarified, because of the cost of obtaining these. Another commenter requested that a recorded memorandum of a lease be submitted, rather than a copy of the lease itself, since, in the preamble to the proposed rule, the Office had recognized that some confidential provisions of a lease are normally interspersed throughout the document and to provide an edited version which excludes these provisions is both time consuming and costly.

The comments were accepted, since ordinarily the regulatory authority will be able to determine disputes of fact about whether a legal right claimed by the applicant exists from the descriptions provided. Section 779.15(a) now requires a description of the documents and certain other specified facts about the nature of the rights involved, rather than copies of the documents.

2. One commenter wanted to add the phrase "or the proposed basis by which the applicant intends to acquire the legal authority. . . ." This suggestion was rejected, since Section 510(b)(6) requires the submission in the application of "a conveyance that expressly grants or reserves the right to the coal—," not a prospective acquisition of the right.

3. One commenter suggested that the regulatory authority be prohibited from determining the completeness or sufficiency of the applicant's documentation in Section 778.15, since this would be tantamount to adjudicating the title as specifically prohibited by Section 510(b)(6)(C) of the Act. The suggestion was rejected, since the regulatory authority must have the right to decide the sufficiency or completeness of the documents, if it is to make the finding required by Section 510(b)(6) of the Act short of adjudicating property rights disputes.

4. *Section 778.15(b).* Commenters objected to the inclusion of the phrase "to the applicant" as going beyond the intent of the Act. Other commenters asked that phrase "or its predecessor in interest" be added after "applicant." The comments were accepted, and the phrase "to the applicant" deleted to clearly express the intent of Section 510(b)(6) of the Act. That section does not specify that the surface owner's consent has to be given to the applicant or its predecessor in interest. The conveyance that expressly grants or reserves the right to extract the coal is the point of concern.

5. Other commenters suggested that a "statement regarding" the written consent of the owner be substituted for the copy of the written consent required in Section 778.15(b). This suggestion was rejected, since Section 510(b)(6) of the Act expressly requires "the written consent of the owner" be submitted to the regulatory authority.

§ 778.16 Relationship to areas designated unsuitable for mining.

The authority, purpose and basis for this Section was discussed at 43 FR 41693 (Sept. 18, 1978).

1. *Section 778.16(a).* Objections were raised to the requirement that the applicant indicate areas unsuitable for mining. The reason given was that the applicant might not be aware of proceedings on suitability and the regulatory authority would have all of the information. These objections did not result in a change in the regulations since Sections 507(d) and 510(b) of the Act require that the applicant affirmatively demonstrate, in a public

manner, that the proposed permit area is not within an area designated unsuitable for mining. Since public notice will be given of any designation proceedings, it is not unreasonable to expect that the applicant should be aware of any unsuitability actions. Clarifying language was added to qualify the statement on the area unsuited for mining to be based on available information.

2. *Section 778.16(b).* One commenter suggested that the phrase "if the proposed area is within an area designation unsuitable . . ." should be added to clarify the conditions as to when the legal and financial data required by this subsection is to be submitted. To add this phrase would have been redundant with Section 786.19(d)(2) which is specifically referenced in section 778.16(b) and which contains the provision suggested by the commenters.

3. Other comments suggested that this Section provide that the application be returned to the applicant, if the permit area contains lands unsuitable or under study as unsuitable for mining. This was rejected because disposition of permit applications is adequately addressed in Sections 786.19 and 786.23.

4. *Section 778.16(c).* Objections were raised to requiring the owner's consent before mining within 300 feet of a dwelling, on the grounds that the Section went beyond Section 522(e) of the Act, which provides that the owner's consent is subject to valid existing rights. The comments have been accepted. Section 778.16(c) has been changed to reflect conditions placed on the requirement for owner consent, by reference to subsection 761.12(e).

5. Other comments suggested that permission of the occupant of a dwelling be required. This suggestion was rejected, as Section 522(e) of the act expressly requires the waiver by the owner only.

§ 778.17 Permit term information.

The authority, purpose and basis of this Section were presented in 43 FR 41693 (Sept. 18, 1978). The reference to subsection 786.11(a) in the proposed rule was changed to subsection 786.25(a) in the final rule to reflect the new Section number for these provisions. Comments requesting that "anticipated" be used to qualify the phrase "acres to be disturbed" were accepted because this Section calls for an estimate of future action.

§ 778.18 Personal injury and property damage protection insurance information.

The authority, purpose, and basis of this Section was discussed at 43 FR 41693 (Sept. 18, 1978).

§ 778.19 Identification of other licenses and permits.

The authority, purpose and basis of this Section were discussed at 43 FR 41693 (Sept. 18, 1978). Commenters objected that the listing of other licenses and permits is unnecessary, not required by law, and that the licenses were not necessary for a permit. Commenters noted that, in many cases, action would not have been taken on the non Federal licenses or permits at the time of Federal permit application. The alternative of deleting this requirement was rejected on the basis of the discussion in the preamble at 43 FR 41693, 778.19; However, a change has been made in the regulations reflecting the fact that action may not have occurred on other license applications. The rule clearly indicates that the licenses need not be issued prior to issuance of the Federal permit. The term "numbers" was added to specify the nature of the identity of the applications and make it consistent with the manner of identifying permits or licenses.

§ 778.20 Identification of location of public office for filing of applications.

The authority, purpose and basis of this Section were presented at 43 FR 41693 (Sept. 18, 1978). Some commenters objected to filing a copy of their application simultaneously with the permit application, because they would not know the location of the approved public office. Section 507(b)(6) of the Act requires that the application contain the location where the application is available for public inspection and, therefore, contemplates that the location will be specified prior to filing. Therefore, the rule was not modified.

§ 778.21 Newspaper advertisement and proof of publication.

The authority, purpose and basis of this section were discussed at 43 FR 41693 (Sept. 18, 1978). The reference to the minimum standards for acceptable newspaper advertisements has been changed to reflect the renumbering of this provision as Section 786.11.

1. Comments were specifically solicited on the amount of time to allow for filing after the last date of publication. Commenters responded that proof of publication could be delayed up to two months after the last advertisement publication in small rural newspapers. OSM believes, however, that adequate proof of publication can be provided in less time, since the regulation does not require the proof necessarily to be prepared by the newspaper's employees, although this is common in many areas. Four weeks was suggested frequently to be a reasonable length of time that would not unduly delay the processing of the application. The comments were accepted. The time has been extended to not later that four weeks after the last date of publication.

2. Some commenters objected to the requirement of submitting proof of publication, since it is not specifically required by sections 507(b)(6) or 513(a) of the Act. The proof of publication is intended to aid the regulatory authority to determine if the requirements of Section 513(a) of the Act has been met. Moreover, under Sections 102 and 510 of the Act, the applicant must prove, in fact, that preconditions for approval of a permit have been met. To satisfy this burden, the regulatory authority needs to be supplied with proof of publication.

3. Many commenters objected to the requirement that proof of publication of the newspaper advertisement be furnished with the application. Section 513(a) of the Act requires that an applicant submit a copy of the advertisement at the time of submission of the application. It further specifies that "at the time of submission (of an application) such advertisement shall be placed by the applicant in a local newspaper . . ." Proof of publication is, therefore, not being required at the time of submission of the application under the final rules.

4. Other commenters were concerned that the rules as proposed in September would completely prevent submitting a "complete application," if the application and proof of publications are elements in determining the completeness of an application. Section 778.21 has been modified to state that the newspaper advertisement and the proof of publication are to ultimately be made part of a complete application, after all proof of publication is made available at the end of the advertisement process.

PART 779—SURFACE MINING PERMIT APPLICATION—MINIMUM REQUIREMENTS FOR INFORMATION ON ENVIRONMENTAL RESOURCES

Introduction

1. Part 779 establishes the minimum standards for the Secretary's approval of permit application requirements under regulatory programs regarding information on existing environmental resources that may be impacted by the conduct and location of the proposed surface mining activities. It corresponds to part 783 for underground mining activities. With the information required under part 779, the regulatory authority is to utilize information provided in mining and reclamation operations plans under part 780, in order to determine what specific impacts the proposed surface mining activities will have on the environment

and whether the activities will comply with part 816 of subchapter K. The authority, basis and purpose of part 779 were generally described at 43 FR 41694–41699 (Sept. 18, 1978).

Some editorial changes have been made to improve the clarity and usefulness of part 779. Sections 779.21 and 779.26 of the proposed rules, both of which relate to soil resources, have been combined into section 779.21 of the final rules. A new section 779.27 has been added by transfer of parts of the material covered by section 785.17 of the proposed rules relating to prime farmland identification.

2. A wide variety of comments were received on proposed part 779 and a number of changes were made in the final rules. Numerous comments were received objecting, generally to provisions of part 779 requiring applications to describe resources for the entire mine plan and adjacent areas, in addition to the proposed permit area.

The Office has not adopted these comments completely, but has made substantial changes in the final rules, most of which narrow the geographic scope of the rules in the direction suggested by the commenters. In some sections, information on the mine plan and adjacent areas is still required, for reasons discussed in the preamble to the definition of mine plan area in section 701.5 and to individual sections of part 779. However, because not all of section 779 requires such extensive information, it was decided to delete reference to mine plan and adjacent areas in the title to part 779 and in sections 779.1–779.2. Instead, the geographic scope of information to be submitted is specifically prescribed in the individual sections of part 779.

3. One commenter expressed general concern that parts 779 and 780 relied too heavily on the industry to supply application information, suggesting that neutral third-parties be assigned this responsibility. The Office has not, in general, accepted this comment, because the Act clearly provides that the industry is to shoulder the burden of proving its entitlement to a permit. *See* Sections 102, 507, 508, and 510 of the Act. However, third-parties will have roles in providing data which the applicant can rely upon in the applications. See 30 CFR 779.12(b), 779.13(b), 779.20, and 779.27(c).

4. Section 779.1 provides the scope of part 779. It was shortened to clarify its meaning and eliminate redundant language from the proposed rule. Similar changes were made to 779.2. Some commenters objected to the provision of section 779.2(a) of the proposed rules, that applications present a complete and accurate description of environmental resources. These commenters suggested a variety of alternative terms such as "sufficient to reasonably project impacts," and "to the extent possible." The Office has rejected these comments. The phrase "complete and accurate" is drawn directly from Section 510(b)(1) of the Act and insures that the Congressional policy of requiring comprehensive and precise data in applications will be achieved.

5. Other than editorial changes to improve its clarity, Section 779.4 has not changed from the proposed regulation. No comments were received on this subsection. This section is intended to place the responsibility on the applicant to supply the permit application information required by Part 779, except where specifically excepted in Part 779. *See* 30 CFR 779.13. It also specifies that State and Federal agencies are responsible for supplying certain information for permit applications as expressly specified in Part 779. Sections 102, 201, 501, 507, 508, and 510 of the Act provide the authority for this section.

§ 779.11 General requirements.

Section 779.11 provides a general explanation of the information concerning environmental resources that must be included in a permit application and the areas for which such information must be provided. The authority, basis and purpose for this section were discussed at 43 FR 41694 (Sept. 18, 1978).

1. Several commenters suggested that this section be supplemented by a requirement that each application must contain a narrative summary understandable to the lay person. OSM has not adopted this change, because this information is being required for review by the regulatory authority to determine compliance with the permanent performance and design standards; OSM expects that regulatory authority staff will be available to explain the material in the application to the lay person.

2. Other commenters suggested limiting these requirements to only such information as is practically available and to just those known environmental resources in adjacent areas, in order not to impose a burden on permit applications or hold them responsible for information on areas where they have no legal access. OSM has not accepted these changes for the following reasons. First, under Section 510(a) of the act, permit applicants have the burden of proving that they can mine in conformance with the requirements of the Act and, to the extent that information needed to meet that burden is not already available from secondary sources, it must be developed by the applicant as completely and accurately as possible. Second, concerning access to adjacent areas, applicants will be able to provide suitable alternative information from secondary sources, such as data from similar or nearby areas, expert opinion, or modeling.

§ 779.12 General environmental resources information.

The authority, basis and purpose of this Section were generally discussed at 43 FR 41694 (Sept. 18, 1978). Paragraph (c) of the proposed rule was moved to Section 778.13(g) in the final rule and is discussed in further detail in the preamble to that Section.

Section 779.12(a) requires that a surface mining activities permit application identify and describe each portion of the mine plan area for which individual permits will be sought; the required information concerns the size, sequence, and timing of each such portions of the mine plan area (i.e., individual permit areas).

The language of the final regulation has been modified to clarify its meaning. These narrative requirements are complemented by the maps and plans provisions of Sections 779.24(c) and 780.14(a). The phrase "total life" of the mining operation and "throughout the operations" are used interchangeably in these Sections. This terminology has been added to ensure that the narrative information is supplied for the entire area that will be mined as part of one continuous mining operation, regardless of how the operator divides the entire mine into subunits (e.g., "permit areas") for the purposes of individual permit applications. (See Section 508(a)(1) of the Act.)

The information required under Section 779.12(a) will be used, first, to designate individual permit areas in accordance with the definition of "permit area" in 30 CFR 701.5 and the permit term limitations of 30 CFR 776.25(a). It also will serve, along with the information of Sections 779.24(a) and 780.14(a), to allow the regulatory authority to designate appropriate incremental performance bonding under Subchapter J. The sequencing of operations also will enable the regulatory authority to predict the cumulative impacts on the hydrology of the general area, together with that of all anticipated mining in the area, as required by Sections 507(b)(11), 510(b)(3), of the Act, and 30 CFR 786.19(c). In addition, the regulatory authority will be able to evaluate the pace of the operations, impacts on other protected resources, such as fish and wildlife, land uses, and prime farmland. In that regard, comments suggesting that Section 779.12(a) be limited to the permit area only were rejected, because Section 508(a)(1) clearly provides for this information to be supplied for the entire life of the proposed operations (See also the Pre-

amble to the definition of mine plan area in Section 701.5.)

Section 779.12(b) is adopted to ensure that the regulatory authority has enough information to enable it to determine whether surface mining activities will comply with 30 CFR Sections 761.11 and 786.19(e). The authority, basis, and purpose of this Paragraph were discussed at the Preamble to the proposed regulations at 43 FR 41693–41694 (September 18, 1978).

1. A number of commenters recommended that the language in proposed Section 779.12(b) concerning paleontological, cultural, historic and unique geological features be deleted. In the final regulation, only cultural, historic, and known archaeological features are required to be identified. The reason for the deletion of paleontological and unique geological features is that the Act and the National Historic Preservation Act (NHPA) require only that man-made cultural, historical, and archaeological features be protected in the mining permit process. The extent to which non-man-made cultural, historic, and archaeological features may be protected by the Act is discussed in the Preamble to final regulation Section 779.22. Paleontological and unique geological features are to be protected by Parts 764 and 765 of the final regulations through petitions for designations of lands as unsuitable for mining.

2. Many commenters were concerned about the burden of identifying the resources listed in the proposed regulations. A number of commenters recommended that only known features be covered. Several commenters also suggested that only "important" or "significant" resources be protected. These commenters claimed that the Act does not authorize the broader language of the proposed rule and argued that permit applicants ought not be required to conduct surveys. Another commenter suggested that the Section should be more specific in its requirement of identification of historic resources as to the nature of the investigation required. This commenter recommended that applicants be allowed to rely on any State surveys of such resources. A commenter suggested that the regulatory authority should have the responsibility of locating the protected features, arguing that States already have the personnel to locate these features. A commenter also stated that this regulation would require applicants to prepare an environmental impact statement for every mine and that Federal and State agencies should take responsibility for gathering all the information.

In the final rules, the Office requires identification of two categories of cultural and historic properties. First, properties listed or eligible for listing on the National Register of Historic Places must be identified. By definition, these items are important and known. Second, other known archaeological properties must be identified to ensure that the regulatory authority and the public are apprised of those properties which may be entitled to listing on the National Register. Regarding conduct of the application investigation by the regulatory authority, the Office has not specified this, because it is the responsibility and burden of the permit applicant to establish its entitlement to a permit. *See* Sections 102, 507, 508, 510 of the Act. However, under the final regulation, much of the required information would be available from State and Federal agencies. This should greatly reduce the burden of investigating.

3. A commenter suggested that, rather than requiring information on all the listed features for every permit area, only data "appropriate" to the specific permit area should be required. OSM rejected this suggestion, because the purpose of the requirement is to identify what protected features are present in the first place. In addition, it would be impossible to determine what data would be "appropriate" without first knowing what features exist on the mine plan area. OSM rejected the suggestion that only those features "which may be adversely affected" by mining activities be covered for the same reason.

4. A number of comments concerned the geographic scope of the informational requirements. Several commenters suggested that "mine plan area" be replaced by "permit area." This comment was rejected. Sections 102 and 522(e) of the Act and the NHPA protect cultural and historical features whether onsite or offsite.

A commenter suggested replacing "adjacent area" with "permit area," stating that the Act requires information only for the permit area. However, the commenter offered no support for this proposition. Another recommended that "adjacent area" be deleted, arguing that the Act does not authorize the requirement, that it would be costly in time and money to comply, and that the applicant may not even have the legal right to enter adjacent property to survey it. In regard to the problem of access to areas which the applicant has no legal right to enter, this issue is discussed in the Preamble to Section 779.11. In addition, the required information will frequently be available from government agencies. In regard to the other objections, Sections 102 and 522(e) of the Act and the NHPA protect cultural and historical features off the mine site as well as on it.

5. A commenter suggested that the rule be changed so that listed features need only be identified if the regulatory authority so requires. This commenter stated that the proposed regulation is broader than Section 507(b)(13) of the Act requires. However, Section 507(b)(13) states that the permit application "shall" contain "all" man-made features and known archaeological sites, which indicates that the regulatory authority lacks discretion to waive the requirements. In addition, Sections 102 and 522(e)(3) of the Act, and the National Historic Preservation Act require protection of all important cultural and historical properties.

6. Another commenter recommended that applicants be required to perform a resources survey in accordance with accepted professional standards and practices. The rationale was that identification of some cultural resources allegedly require statistical prediction. OSM rejected this suggestion as unnecessary, because Section 779.2 requires that applications be "accurate." Thus, the regulatory authority can insure that accurate predictions are made under Section 779.2.

7. A commenter suggested that Section 779.12(b) should require a plan for historic resources which would show the effects of mining on these resources and how they would be preserved. OSM rejected this suggestion as unnecessary, because parts 761 and 780 adequately provides for such plans.

8. A commenter stated that Section 779.12(b) was too restrictive and inconsistent with other regulations concerning historic places. This commenter recommended that historic places be described throughout the regulations as resources with scientific, historical, archaeological, topographic, geological, ethnological, cultural, or recreational significance, with particular concern for Indian history and culture. Sections 764 and 765 of the regulations already provide for protecting these other resources, and States may protect them further if they so desire. These permanent program regulations do not apply to mining on Indian reservations; at present, 25 CFR 177 controls such mining.

9. A commenter recommended that, where a State permit application identifies historic resources which under the regulations would be referred to the State's historic preservation officer, that Officer should evaluate the significance of the resources, based on their eligibility for listing on the National Register of Historic Places. Another recommended that the regulation require consultation with State historic preservation officers. These changes are unnecessary, as Sections 761.12 and 770.12(c) already provide for such coordination.

§ 779.13 Description of hydrology and geology: General requirements.

Authority for this Section is Sections 102, 201(c), 501(b), 503, 504, 506, 507(b), 508(a), 509, 515(b), 517, and 519 of the Act. This Section requires that all applications contain a statement of the geology, hydrology, and water quality and quantity for all lands within the proposed mine plan area, the adjacent area, and the general area, in accordance with the more detailed requirements of Sections 779.14–779.17 of this Part.

The requirements of Section 779.13 specify, in general, the obligation of the applicant to set forth in the application sufficient information so that it provides the determination required by Section 507(b)(11) of the Act and 30 CFR 780.21(c), and so that the regulatory authority can make the cumulative impacts assessment required by Sections 507(b)(11) and 510(b)(3) of the Act and 30 CFR 786.19(c).

Section 779.13 will require the applicant to set forth in the application all data regarding the description of the "general area," as defined in 30 CFR 770.5. This is in keeping with Congress' intent that the applicant set forth all information necessary for the determination of the impacts of proposed operations on the hydrologic balance. (*See* H.R. Report No. 95–218, 95th Congress, 1st Session at 111, 1977.) However, it should be noted that for actual collection of that data, the applicant may, at his/her option, rely on State and Federal agencies for the description of areas outside the mine plan area Section (779.13 (b)(1)). Of course, if that information has not yet been collected, then the applicant either will have to collect it, or wait until government agencies make it available (Section 779.13(b) (2)–(3)), as provided for in Section 507(b)(11) of the Act.

At the initiation of the permanent regulatory programs, Section 779.13(b)'s requirements are not expected to result in the disruption of existing surface mining activities. It is expected that State and Federal agencies will have collected the necessary data in many areas by the summer of 1980, when State and Federal programs commence, especially through the efforts of the U.S. Geological Survey. If the data has not been made available and the applicant chooses not to collect, but rather to wait for government efforts, then, through 30 CFR 771.13(b), the applicant may continue to conduct existing operations under the interim regulatory program until an initial decision is made on the new permit.

Section 779.13(c) in the final rules has been adopted for two principal reasons: First, it reflects the comments responding to the Office's call for submission of views on the utility of water modeling in the permit process at 43 FR 41695–41696 (Sept. 18, 1978). These comments, in balance, noted that water modeling has not yet reached a state of the art to be a universally acceptable tool, although it is sufficiently developed for use in some localities. Thus, the Office has specified in Section 779.13(c) that modeling may be used, but is not being mandated.

In addition, Section 779.13(c) is adopted to account for the substitution of representative "seasonal variation" descriptions for mandatory "one-water year" data collection requirements at Section 779.16 (a), (b)(1) of the proposed rules. As is explained in more detail in the Preamble to Section 779.16, the Office expects that the requirements of that Section can be met in many cases without the necessity of the applicant actually collecting one full year of data, but, instead, by extrapolating from existing data on the same or similar watershed through the use of modeling or other predictive tools.

Therefore, Section 779.13(c) provides for the means to satisfy the requirements of Section 779.16. Section 779.13(c) is qualified, to insure that models do not fail to provide all information necessary to satisfy the requirements of Sections 779.14–779.17.

Modeling in this context refers to various analytical techniques used to regionalize and synthesize the historical, geologic, and hydrologic conditions of a mine plan area, to determine surface and ground water parameters. Some models may be developed to predict how proposed surface mining and reclamation operations may impact on the ground and surface water systems. Such mathematical models may be both cost-effective and expedient in complex mining operations, since they may include many individual mining operations that impact on one or more hydrologic components such as a large and important aquifer.

1. Numerous commenters tended to be negative, fearing mandatory modeling, and expressed concern over model verification and calibration, state of the art, accuracy, and cost. On the other hand, some suggested that minimum, maximum, and average discharges may be subject to wide errors, if based upon data obtained for a relatively short period of time (one year) and that those discharge parameters would be more reliable if obtained from a regional (synthesized) analysis through modeling. The value of modeling ground water systems and regionalizing or synthesizing discharge quantities is recognized.

Modeling or synthesis must be based upon conditions at (or near) and applicable to the hydrologic conditions of the mine plan area. The regulatory authority must approve modeling techniques to be used and may require that some site-specific information be obtained. Technical literature on modeling that may be helpful to the user are:

Arnett, R. C., Deju, R. A., Nelson, R. W., Cole, C. R., and Gephart, R. E., 1976. Conceptual and mathematical modeling of the Hanford ground water flow regime. (Prepared by Atlantic Richfield Hanford Co., Richland, Wash., for U.S. Energy, Research and Development Administration.) Report ARH-ST-140, 103 pp.

Bachmat, Yehuda; Andrews, Barbara; Holtz, David; and Sebastian, Scott. 1978. Utilization of numerical ground water models for water resources management. Chapters 3.5., U.S. Environmental Protection Agency Report EPA-600/8-78-012, 178 pp.

Davis, S. N., and DeWiest, R. J. M. 1966. Applications of ground water flow. pp. 201–259 (Chapter 7) in Hydrogeology, John Wiley and Sons, New York, 463 pp.

DeWiest, R. J. M. 1965. Numerical and experimental methods in ground water flow. Chapter 8 in Geohydrology, John Wiley and Sons, New York, pp. 318–348.

Gelhar, L. W. 1974. Stochastic analysis of phreatic aquifers, American Geophysical Union, Water Resources Research, Vol. 10, No. 3, pp. 539–545.

Gelhar, L. W., and Wilson, J. L. 1974. Ground water quality modeling, Ground water, Vol. 12, No. 6, pp. 399–408.

Gillham, R. W., and Farvolden, R. N. 1974. Sensitivity analysis of input parameters in numerical modeling of steady state regional ground water flow. Amer. Geophysical Union, Water Resources Research. Vol. 10, No. 3, pp. 529–536.

Huntoon, P. W. 1974. Finite difference methods as applied to the solution of ground water flow problems, Wyoming Water Resources Research Institute, Laramie, 108 pp.

Konikow, L. F., and Bredehoeft, J. D. 1974. Modeling flow and chemical quality changes in an irrigated stream aquifer system, American Geophysical Union, Water Resources Research, Vol. 10, No. 3, pp. 546–562.

Kunkel, Fred. 1973. Data requirements for modeling a ground water system in an arid region, U.S. Geological Survey Water-Resources Investigations, WRI 4–73, pp. 1–14, 21 pp.

Meyer, C. F. and Kleinecke, D. C. 1968. Development of capabilities for mathematic modeling of ground water flow by use of digital computers. General Electric Company—Tempo, Santa Barbara, Calif., Report 68TMP-90, Section 2, 39 pp., and appendixes.

Nelson, R. W. 1978. Evaluating the environmental consequences of ground water contamination, parts 1–4, American Geophysical Union, Water Resources Research, Vo. 14, No. 3, pp. 409–450.

Ott, W. R., editor 1976. Environmental modeling and simulation, U.S. Environmental Protection Agency Conference, April 19–22, 1976, Cincinnati, Ohio. Proceedings, Chapter 12, 19., EPA Report 600/9-76-016, 847 pp. (Available from U.S. Department of Commerce, NTIS PB-257.)

Polubarinova-Kochina, P. Y. 1962. Approximate numerical and graphical methods in the study of unsteady ground water flow, Chapter XVI in his Theory of Ground-

water Movement, Princeton University Press, Princeton, N.J., pp. 572-588.

Polubarinova-Kochina, P. Y. 1962. Graphical, numerical, and experimental methods in the study of ground water flow, Chapter XI in his Theory of Groundwater Movement, Princeton University Press, Princeton, N.J., pp. 431-479

U.S. Environmental Protection Agency and the National Water Well Association. 1976. Proceedings of the third national ground water quality symposium. Groundwater pp. 455-462, Special issue, Vol. 14, No. 6, pp. 257-492.

Zand, S. M., Kennedy, V. C., Zellweger, G. W., and Avanzino, R. J. 1976. Solute transport and modeling of water quality in a small stream. U. S. Geological Survey, Journal of Research, Vol. 4, No. 2, pp. 233-240.

The information required in Section 779.13 will enable the regulatory authority to determine whether the applicant can comply with the requirements of Sections 816.13-15, 816.31-39, 816.41-57; 816.71-73; 816.81-88; and 816.91-93 of Subchapter K. The technical literature used to develop Sections 779.13-779.17 was the same as used for the quoted Sections of Subchapter K, plus additional materials noted in this portion of the Preamble.

2. A few commenters questioned the benefits of requiring water-well monitoring data in permit applications, where the nearest citizen users of ground water are over one mile from the mine site. The Office did not modify the regulations in response to the comment.

Congress required that permit applications contain detailed information on the ground water hydrology characteristics of areas on and off proposed mine sites under Sections 507(b)(14), 507(b)(15), and 508(a)(13) of the Act.

Benefits obtained by this information include enabling evaluation by the regulatory authority of whether the proposed operations will adversely affect aquifers supplying water for offsite beneficial use. Ground water can travel long distances underground and pollution can take a long time to travel through those aquifers. (Hardaway and Kimball, Coal mining and ground water, 1978, p. 18; Feder. et al., Geochemistry of ground waters in the Powder River Coal Region, 1977, 7 pp.; Hamilton and Wilson, A generic study of strip mining impacts on ground water resources, 1977, Chapter 2; McWhorter, et al., Surface and subsurface water quality hydrology in surface mined watersheds, 1977, pp. 11-70; Pennington, Relationship of ground water movement and strip mine reclamation, 1975, pp. 171-172; Grim and Hill, Environmental protection in surface mining of coal. 1974, pp. 17-27). Further, destruction of aquifers by pollution or depletion of water can be substantially intensified by the cumulative effects of mining in an area. (*See* Sections 507(b)(11), 510(b)(3) of the Act; H.R. Rep. No. 94-1445, 94th Cong., 2nd Session at pages 64-65, (1976)). Thus, data from wells away from the mine plan area may be needed in a particular case to enable the regulatory authority to make the assessments required by Sections 507(b)(11) and 510(b)(3) of the Act on the cumulative impacts of all anticipated coal mining in an area on the quality and quantity of ground water systems.

The regulations do not, however, necessarily require that all ground water data be obtained for application requirements from water wells. As pointed out by a commenter, sampling of springs and other surface discharge points of ground water may provide sufficient representative data to establish ground water quality characteristics of the mine plan, adjacent and general area.

For ground water quantity, expert hydrologic opinion, based on review of existing geologic and subsurface hydrologic conditions, may suffice. Whether water wells must be used as the source of all data for application requirements is a discretionary matter for the regulatory authority to determine, on a case-by-case basis.

In many cases, even if wells are needed, they can be based on the drill/bore holes made to locate coal deposits and provide other subsurface information which the applicant needs independent of the hydrology permit application requirements. (*See* Grim and Hill, 1974, at 21-23.) Of course, if the proposed operations should significantly affect an aquifer, then wells must be installed for monitoring purposes prior to mining operations. (*See* Section 517(b) of the Act; 30 CFR 816.52.)

3. Several commenters suggested deleting "general area" from Section 779.13(a), and added that "general area" was not defined. These comments were rejected, because Sections 507(b)(11) and 510(b)(3) of the Act require information on the general area to be included in the permit application, and general area is defined in Section 770.5. Commenters requests that a "confidentiality" provision be added to Section 779.13 were rejected, because that matter is covered under Section 786.15.

4. Several commenters questioned whether Section 779.13(b) should relate to the "area outside the proposed mine area" or the entire "general area." Section 507(b)(11) of the Act requires information on the general area. As the Office interprets the Act, data collection for the actual area to be mined and reclaimed (e.g. the "affected area") remains the applicant's responsibility, while for the remainder of the general area, the applicant may rely on the government to provide the data for inclusion in the application. Thus, changes were made to specify the appropriate area. The same change was made in Section 783.13(b).

5. Several commenters on Section 779.13(b)(2) questioned who should be required to obtain the data which is not available from an appropriate Federal or State agency. One alternative would require that the applicant "shall" gather and submit the data. Another alternative would require that the applicant "may" gather and submit the data in the permit application. A third alternative would be to require an appropriate Federal or State agency to gather and submit information on the general area when an application is filed for an area on which information has not been previously collected.

It is the applicant who is seeking permission to mine, and Congress clearly intended that no permits be issued until the probable hydrologic consequences are known. (Section 507(b)(3) of the Act.) It is impractical to require government agencies to embark upon extensive new data collection programs in the field in response to every individual permit application. Cost-effective data collection efforts will require management of field programs to mesh data acquisition with localities where large numbers of applications are pending, critical water resources are located, or little existing data is on hand.

Also, Congress recognized this problem of data collection and provided assistance for small operators under Section 507(c) of the Act (*see* Part 795).

Thus, it was decided to specify in the rules that the applicant can chose either to wait until a government agency can provide the data or to collect the data with or without small operator's assistance. Therefore, the word "shall" was replaced by "may" in Sections 779.13(b)(2) and 783.13(b)(2).

6. Several commenters suggested that Section 779.13(b)(3) be modified to allow the regulatory authority to begin processing an application that is incomplete for lack of all the hydrologic and geologic data necessary to comply with Sections 779.13-779.16. Accepting this alternative would assume that the application be deemed "complete" pending gathering data or waiting for available data to be provided. The Office rejected this proposal, because it could cause considerable administrative problems and result in confusion as the regulatory authority and public attempted to trace or follow such partial applications. For example, if the application were completed later, the net time and cost involved would be greater for reviewing a partial application two or more times, than reviewing an initial application that was complete. It also

is imperative that data supplied with the application be complete so that the regulatory authority can assess the reclamation plan. The Office believes that the application review process would suffer if it were allowed to proceed with piece-meal information on the hydrologic balance, as this information is crucial to successful mine planning. The requirement, however, is not intended to preclude preliminary discussions among the applicant, the regulatory authority, and the public leading to the formal administrative decision of whether the application is "complete" under 30 CFR 786.11 and 786.17(a)(1).

7. Several comments were received which suggested specifying the term "surrounding area," and deleting reference to other terms in Section 779.13(b). The Office recognizes that "surrounding areas" are used in the Act in various Sections, in particular Section 507(b)(11), but Congress did not define the term. The Office has developed the terms "adjacent area," "mine plan area," "affected area," "permit area" and "general area" in order to delineate specific areas appropriate to all Sections of the regulations. The Office feels that these terms are within the intent of Congress. The term "general area" is defined Section 770.5 to correlate with what Congress meant by "surrounding area" in Sections 507(b)(11) and 510(b)(3) of the Act.

8. Many commenters feared that pre-existing data would not be useful for the requirements of Section 779.13 and that new field data are required for all permits. That is not the intent of the regulations. However, Congress has mandated that there be data in the application "sufficient . . . for the mine site and surrounding areas so that an assessment can be made by the regulatory authority of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability" (*see* Section 507(b)(11) of the Act). Therefore, if the pre-existing and available data are not sufficient for a regulatory authority to make an objective determination based on facts, then new data must be collected that will be sufficient.

§ 779.14 Geology description.

Legal authority for this Section is Sections 102, 201, 501, 503, 504, 506, 507, 508, 515, 516, and 517 of the Act. This Section implements requirements of the Act for providing an adequate geologic description to the regulatory authority of all lands to be affected throughout the duration of surface mining activities. The information required under this Section will enable the regulatory authority to make the general area assessments required by Sections 507(b)(11) and 510(b)(3) of the Act, and to determine whether the applicant can comply with the requirements of Sections 816.13-.15, 816.41-.59; 816.61-.68; 816.71-.74; 816.79; 816.91-.93, 816.99, 816.133 and 816.150-816.181 of Subchapter K. Technical literature relied upon for developing this Section follows:

Caruccio, F.T. 1968. An evaluation of factors affecting acid mine drainage production and the ground-water interactions in selected areas of western Pennsylvania, in Second symposium on coal mine drainage research, Mellon Institute, Pittsburgh, Pa. Bituminous Coal Research, Inc., Monroeville, Pa., preprint. Pp. 107-151.

Caruccio, F.T. et al., 1977(s) Paleoenvironment of coal and its relation to drainage quality, U.S.E.P.A., Interagency. Energy-Environment Research & Development Series Report EPA-600/7-77-067, 106 pp.

Dollhopf, D.J., Hall, W.D., and others, 1977. Selective placement of coal stripmine overburden in Montana. (U.S. Bureau of Mines contract report HO262032.) Montana State University, Montana Agricultural Experiment Station. Vol. I, Data Base, 109 pp.; Vol. II, Initial field demonstration, 98 pp.

Emrich, G.H., and Merritt, G.L. 1969. Effects of mine drainage on groundwater, Groundwater, Vol. 7, no. 3, pp. 27-32.

Grim, E.C., and Hill, R.D. 1974. Environmental protection in surface mining of coal. U.S. Environmental Protection Agency Publication EPA-670/2-74-093, 276 pp.

Grubb, H.F. and Ryder, P.B. 1972. Effects of Coal mining on the Water Resources of the Tradewater River Basin, Kentucky. U.S. Geological Survey Water Supply Paper 1940. 83 pp.

Hamilton, D.A., and Wilson, J.L. 1977. A generic study of strip mining impacts on groundwater resources. Massachusetts Institute of Technology, Department of Civil Engineering, Ralph M. Parsons Laboratory for Water Resources and Hydrodynamics. Report No. 229 (R-77-28), 156 pp.

Pfleider, E.P., editor, 1968. Surface Mining. American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc., New York, 1,061 pp.

Ralston, D.S., and Wiram, V.P. 1978. The need for selective placement of overburden and equipment considerations. American Mining Congress Journal. Vol. 64, no. 1, pp. 15-24.

Sobek, A.A., Schuller, W.A., Freeman, J.R., and Smith, R.M. 1978. Field and laboratory methods applicable to overburdens and minesoils. (Prepared by West Virginia University in cooperation with the West Virginia Geological and Economic Survey, Morgantown, W. Va.) U.S. Environmental Protection Technology Series Report EPA-600/2-78-054, 204 pp.

U.S. Department of Agriculture, 1977. Laboratory methods recommended for chemical analysis of mined-land spoils and overburden in western United States. U.S. Department of Agriculture, Agriculture Handbook 525, 31 pp.

U.S. Environmental Protection Agency, 1976b. Erosion and sediment control—Surface mining in the eastern United States; Vol. 1, Planning; Vol. 2, Design. U.S. Environmental Protection Agency Technology Transfer Seminar Publication EPA-625/3-76-006. Vol. 1, 102 pp.; Vol. 2, 137 pp. (Available from U.S. Department of Commerce, NTIS PB-261 343.)

U.S. Geological Survey. 1974a. Proposed plan of mining and reclamation, Big Sky Mine, Peabody Coal Co., coal lease M-15965, Colstrip, Montana, USGS final environmental statement, FES 74-12, vol. 1,438 pp., vol. 2 various pagings.

Paragraph (a) of Section 779.14 specifies the general requirement to be implemented through specific steps identified in Paragraph (b). The language of Paragraph (a) was shortened from the proposed rule to eliminate ambiguity and redundancy. However, its intent remains the same; the application is to contain a general description of the geology for the entire mine plan area.

Geology is to be described for all strata down to that strata immediately below the lowest coal seam to be mined, and to the lowest aquifer in which surface mining activities are actually conducted or located (e.g. "affected"). Thus, if operations involve blasting which fractures strata below the lowest coal seam to be mined and extends in to a lower aquifer, (Grim and Hill, 1974 pp. 2; Grubb and Ryder, 1972 pp. 25; USGS, 1974a, v. 1 pp. 120), geology must be described down to and including that aquifer. Section 779.14(b) specifies the methods by which the data is to be collected to make the geologic description, and detailed types of data needed.

1. Regarding commenter's concern that the permit regulations should require only information for the immediate permit area and not the entire mine plan area, the Office has modified Section 779.14 in the final rules to limit its sweep. First, Section 779.14(a) has been revised to require that, at a minimum, the application contained a general description of the geology of the mine plan area. This description is needed so that the regulatory authority can assess the cumulative impacts of all anticipated coal mining in the "general area," because geologic conditions are major factors in determining the effect of mining on ground and surface waters. (*See* Final EIS at pp. B-III 30-36.)

Section 779.14(b), however, was modified in the final rules, to eliminate the mandatory requirement that the application contain data derived from test borings and core samplings for the entire mine plan area. Instead, minimum requirements may be satisfied by the inclusion of such data for only the first permit area within the mine plan area and sufficient data from other sources for the balance of the mine plan area, to satisfy Section 779.14(a)'s "general description." This change was made upon the Office's understanding that many coal-bearing areas of the United States have been mapped by public and private sources which can provide sufficient data to give a general description of the por-

tion of the mine plan area outside the first permit area. However, if that general data is not available, or local situations require more precise information, the regulatory authority is empowered to require that the applicant perform more detailed testing under Section 779.14(b)(2).

Section 779.14(b)(3) implements the provisions of Section 507(b)(15) of the Act, by allowing for a waiver of submission of the results of test borings or core samplings to the regulatory authority where other equivalent information is available to the regulatory authority.

2. A comment on the proposed version of this Section suggested that it be revised to state explicitly that the application contain the information upon which a waiver is to be granted. This was rejected as redundant. Under Parts 771 and 786, the application must always be "complete," which includes, by implication, the type of information referred to by the commenter.

3. Other commenters on the waiver provision suggested deletion of the condition for approval that equivalent information be available to the regulatory authority. These comments were not accepted, because the Office interprets Section 507(b)(15) of the Act to authorize waivers only if the results of analyses of test borings or core samplings is "unnecessary" because other information is available to enable the applicant to bear its burden of proof that reclamation of the proposed operation will be feasible and the hydrologic balance will be adequately protected. (*See* Sections 102, 508(a)(12), 510(b)(1)–(3), of the Act.) Moreover, unless other equivalent information is accessible, the public will not have the opportunity to review and comment on it, frustrating the requirements of Sections 102(i), 507(b)(17), 508(a)(12), 513, 514, and 517(f), of the Act.

4. Several commenters suggested that the proposed rule be modified to add explicit confidentiality protection requirements. This was not done, because such protection is adequately provided under 30 CFR 786.15.

5. Several commenters objected to the provisions of Section 779.14(a) of the proposed rules with respect to the depth to which geology was to be described in permit applications, arguing that requiring description of aquifers and strata below the lowest seam to be mined was beyond the authority of the Act and unnecessary. The Office did not accept these comments, because this information is needed for the regulatory authority to evaluate impacts of proposed operations on ground water systems under Sections 507(b)(11), 508(a)(13), and 510(b)(3) of the Act. Coal mining can adversely effect ground water aquifers below the lowest coal seam to be mined (Emrich and Merritt, 1969, pp. 27-32). Moreover, the information on the general location and nature of strata below the lowest seam to be mined is ordinarily available in the form of drilling and water-well records from various state and county publications and records and from geologic maps and reports of the U.S. Geological Survey. Information is also available ordinarily from general mapping, drilling, and water well records in the general locality of the mine, so that test boring or core sampling may not be necessary for strata immediately below the lowest seam to be mined.

Recognizing that test boring or core sampling may not always be necessary for strata below that which is immediately below the lowest seam to be mined, the final rule was modified to require analyses of borings or samplings under Section 779.13(b)(1) only down to and including the strata immediately below the lowest mined seam. Discretion to require these analyses at deeper depths is reserved to the regulatory authority under Section 779.14(b)(2).

6. Several commenters questioned the need for the items of analyses listed in the proposed rule, with respect to test borings or core samplings, while others supported these requirements. Some commenters questioned the need for *both* test borings *and* core samplings. These were accepted, as Section 507(b)(15) of the Act allows for either boring *or* core analyses. The Office has, however, retained the requirement to be in the final rule, because the listing is needed so that the regulatory authority can determine the projected impacts of the proposed operations on the hydrologic balance, as required by Sections 507(b)(11), 507(b)(14), 507(b)(15), 508(a)(5), 508(a)(12), 508(a)(13), and 510(b)(2)–(3) of the Act.

Section 779.14(b)(1)(i) is expressly required by Section 507(b)(14) of the Act.

Section 779.14(b)(1)(ii) requires production of a statement of the logs of drill holes to show lithologic characteristics and thickness of each stratum and coal seam. Description of these items is required by Section 507(b)(14)–(15) of the Act. Derivation of these items from the drill logs is needed because the logs will show:

"which conditions warrant special mining or soil handling methods . . . form a basis upon which to select the proper mining methods and equipment" (Grim, and Hill, 1974, pp. 22; Pfleider, 1968 p. 212.).

7. Commenters objected to requiring drill log statements on the grounds that use of terminologies among geologists is believed to be so divergent that the statements would not be meaningful. The Office is aware that ambiguity may result from application of local geologic terminology, particularly colloquial descriptors of geologic formations and units. However, the intent of the Act is to provide not so much the proper names of formations, but a proper description of rock type and characteristics as related to the ground water system. These statements are required by the Act. (*See* Section 507(b)(15) of the Act.) The Office thus does not agree with the commenters. If necessary, particularized standardization may be developed by the States and/or the Office for use in the individual regulatory programs.

Section 779.14(b)(1)(iii) requires a description of the physical properties of the strata within the overburden, including, at minimum, compaction and erodibility tests. These are required under the provision of Section 507(b)(14) of the Act calling for a statement of the "nature . . . of the various strata of the overburden."

Knowledge of the physical properties of the overburden is necessary to provide information for predicting toxicity formation, revegetation potential, physical stability, erosion potential, water conductivity, and for long-term management decisions. A major objective of reclamation is to establish a permanent vegetative cover; these efforts are directly related to soil stability and productivity (U.S. EPA, 1976b, vol. 1, pp. 23-53) and to the extent that toxic-forming materials can be prevented from oxidizing (Sobek et. al., 1978, p. 117). Knowledge of the physical properties, such as settling and compaction characteristics, is useful in determining the manner in which spoil should be placed and otherwise replaced in order to minimize erosion and maximize revegetation (Grim, and Hill, 1974, p. 152, 153).

8. For the above reasons, the Office did not agree with commenters suggesting complete deletion of physical property test requirements. However, because of the impracticability of performing particle size analyses on consolidated rock, the Office did agree with comments objecting to routinely requiring size analysis.

Section 779.14(b)(1)(iv) requires statements of chemical analyses of the overburden and strata immediately below the coal to be mined, to identify those portions which contain potentially alkaline, acid, or toxic-forming materials. These requirements are based principally on Sections 507(b)(14), 507(b)(15), and 508(a)(12) of the Act and will be used by the regulatory authority to evaluate the potential of the proposed operation to produce acid or other toxic drainage requiring special treatment and prevention measures. (Grim and Hill, 1974, at 22-24). Analysis of potential

alkalinity of the overburden and substrata is necessary to determine if the proposed operation will involve materials which may provide sufficient buffering capacity to neutralize or mitigate acid or other toxic drainage (Sobek, et al. 1978, pp. 5, 47).

9. The Office did not agree with commenters that overburden chemical analyses should not be required. They are mandated by the Act and supported by the technical literature. (Sobek, et al. 1978, pp. 3-6; Grim and Hill, 1974, pp. 22-24); Pfleider, 1968, p. 212.)

Section 779.14(b)(1)(v) requires analysis of the coal seams to be mined, including sulfur (expressly required by Section 507(b)(15) of the Act), pyrite, and marcasite content. Caruccio (1968) at p. 108, showed that "the amount of acidity produced is dependent in part upon the amount of iron disulfide available for decomposition . . . acidity is dependent upon the pyrite and marcasite."

10. One comment suggested that this Section be revised to include a mandatory requirement for a geologic map in each application. This was not adopted, because mapping of geology is adequately provided for in Sections 779.22(a)(1); 779.24(a); 779.25(a)-(f), (h), (j), (k).

§ 779.15 Groundwater information.

Authority for this Section is Sections 102; 201(c); 501(b); 503; 504; 506; 507(b); 508(a); 510; 515; and 517 of the Act. This Section would require a full description of the ground water hydrology for the proposed mine plan area and adjacent area. Information collected under this Section will enable the regulatory authority to make the assessments required by Sections 507(b)(11) and 510(b)(2) of the Act and 30 CFR 786.19(c) and to determine whether the applicant can comply with Sections 816.13-.15, 816.41-.59; 816.61-.68; 816.71-.73; 816.79; 816.81-.88; 816.91-.93; 816.101-.103; 816.111-.117; 816.133, and 816.150-.180 of Subchapter K.

The occurrence and movement of ground water in coal producing areas can be complex phenomena, dependent on regional and local geologic conditions; multiple aquifers may exist, each having distinct water-bearing characteristics (USGS, 1974b, pp. 25-28). As a result of mining, the chemical quality of the ground water may change significantly in both unconfined and confined aquifer systems (Collier, et al. 1970, p. C-19). In areas where multiple aquifers exist, mining operations can easily cause aquifers containing usable water to be polluted by an acquifer containing water of inferior quality, through creating interaquifer connections from rock fracturing (Grim and Hill, 1974, pp. 1, 2; Emrich and Merritt, 1969, pp. 30-32). In areas where historic ground water data are not adequate to evaluate the ground water resources, the regulatory authority may need to require test drilling to provide adequate hydrologic data. (U.S. Geological Survey, 1974b, p. 6; Van Voast, 1974, p. 6.) These test holes or wells may be necessary for determining water quality in aquifers, location, and extent of aquifers, hydraulic conductivity, transmissivity, and other parameters as required. (Chow, V. T. 1964, Handbook of Applied Hydrology, McGraw-Hill. Chapt. 13-22 through 13-25.)

Technical literature used to develop this Section included that used to develop Section 779.14, the Sections of the regulations listed at Paragraph one (1) above, and, in addition, the following:

Collier, C. R., 1964, Influences of strip mining on the hydrologic environment of parts of Beaver Creek Basin, Kentucky. 1955-59. Chapter B in Hydrologic influences of strip mining. U.S. Geological Survey Professional Paper 427-B, 85 pp.

Collier, C. R., Pickering, R. J., and Musser, J. J. 1970. Influences of strip mining on the hydrologic environment of parts of Beaver Creek Basin, Kentucky. 1955-66. Chapter C in Hydrologic influences of strip mining. U.S. Geological Survey Professional Paper 427-C, 80 pp.

Emrich, G. H., and Merritt, G. L. 1969. Effects of mine drainage on ground water. Ground Water, Vol. 7, No. 3, pp. 27-32.

Grim, E. C., and Hill, R. D. 1974. Environmental protection in surface mining of coal. U.S. Environmental Protection Agency Publication EPA-670/2-74-093, 276 pp.

Hem, J. D. 1970. Study and interpretation of the chemical characteristics of natural water. Second edition. U.S. Geological Survey Water Supply Paper 1973, 363 pp.

Musser, J. J. 1963. Description of physical environment and of strip-mining operations in parts of Beaver Creek Basin, Kentucky, Chapter A in Hydrologic influences of strip mining. U.S. Geological Survey Professional Paper 427-A, 25 pp.

Pietz, R. I., Peterson, J. R., and Lue-Hing, Cecil. 1974. Groundwater quality at a strip-mine reclamation area in west central Illinois, in Second research and applied technology symposium on mined-land reclamation, at Coal and the Environment Technical Conference, October 22-24, 1974, Washington, D.C., pp. 124-144.

United States Geological Survey. 1974b. Shallow ground water in selected areas in the Fort Union coal region, U.S. Geological Survey Open-file Report 74-48, 72 pp. and illustrations and tables.

Van Voast, W. A. 1974. Hydrologic effects of strip coal mining in south-eastern Montana—Emphasis: One year of mining near Decker. Montana Bureau of Mines and Econology Bulletin 93, 23 pp.

1. Regarding commenters' general objections that the permit applications should not require information on areas outside the immediate permit area, the Office decided to specify the area to be studied under Section 779.15 in the final rules. Ground water hydrology characteristics are essential elements of the hydrologic balance (H.R. Report. No. 95-218, 95th Cong., 1st Sess. at 110, 1977). The Act requires that the regulatory authority assess the impacts of the proposed and other operations on the hydrologic balance in the general area around the immediate permit area. (*See* Sections 507(b)(11), 508(a)(13), 510(b)(3), of the Act: H.R. Rept., *SUPRA*, at 91, 113.) Therefore, knowledge of the ground water hydrology of both the mine plan and adjacent areas is essential to a satisfactory permit system.

Proposed Section 779.15 would have required permeability, transmissibility, and production data for all aquifers within the study area. In response to commenters objecting that these items are not necessary for all aquifers, either because some aquifers are small or of no utility, or equivalent information already exists from well records in the general vicinity, the Office has not made these mandatory in the final rule. If necessary, the regulatory authority can require that these types of data be provided under the authority of Section 779.13(a).

2. A commenter felt this Section should be subject to a waiver clause similar to that afforded under Section 779.14(b)(3). This comment was not accepted for several reasons. First, portions of the types of information which were mandatory in all cases in the proposed rule have been left to the discretion of the regulatory authority in the final rule at Section 779.15(b), making a waiver provision unnecessary. For the types of data which remain mandatory under Section 779.15(a), the Office concluded that Congress did not intend that a waiver be provided, because the statutory waiver for geologic information in Section 507(b)(15) of the Act relates to waiving testing types, not eliminating the need for information in the permit application. Section 779.15, unlike Section 779.14(b)(1), does not prescribe mandatory test types (e.g. core drilling or test boring), but rather calls for information which may be developed from any reasonable accurate source. Finally, the Office does not have any authority under the Act for completely waiving the requirement of a description of ground water hydrology in the application.

3. A commenter's assertion that Section 779.15 repeats Section 779.13 was not accepted. Section 779.15 provides the detailed requirements by which the general requirements of Section 779.13 are to be satisfied with respect to ground water information.

4. Several commenters objected to the requirements for fully describing each aquifer which may be impacted by the proposed operations. Some of these commenters asserted that some aquifers are so badly polluted or of such little utility for recharge that

they can be omitted routinely from consideration in the permit review. This was not accepted. It is the applicant who must bear the burden of proof that the proposed operation will not adversely affect the hydrologic balance. (*See* Sections 102, 507(b), 508(a)(12), 510 (a)–(b) (2)–(3) of the Act.) Thus, the application must contain sufficient information upon which the regulatory authority can decide, subject to public participation, that particular aquifers require little or no reclamation protection or monitoring. Further, Section 779.15(a) does not specify the methods by which the required information is to be obtained for inclusion in the application. The regulatory authority, therefore, will have broad discretion in determining the types and level of detail which it needs with respect to marginal aquifers. Finally, it was not within the scope of this rule-making to account for highly localized situations such as those cited by some commenters. These are more appropriately addressed in the context of individual regulatory program approvals.

5. In response to comments, the Office has narrowed the types of information that must be provided in an application under Section 779.15 in the final rules. Section 779.15(a) provides these mandatory requirements. Section 779.15(a)(1) requires description of depth and horizontal extent of ground water and is supported by the express provisions of Section 507(b)(14) of the Act. Section 779.15(a)(2) requires the lithology and thickness of aquifers and is based on the requirements of Sections 507(b)(11), 507(b)(14), and 508(a)(13) of the Act. The lithologic characteristics and thickness are important, in that they provide valuable information on the ability of the rock to contain and transport water, and on the volume of water and depth at which water will be encountered. (Grim and Hill, 1974, pp. 22–26.)

Section 779.15(a)(3) requires a description of the uses of the water table and aquifers, so that the regulatory authority can evaluate the impact of the proposed operation as required by Sections 507(b)(11), 508(a)(13), and 510(b)(3) of the Act. Section 779.15(a)(4) requires a statement of the quality of all subsurface water encountered in the permit application investigation, as required by Section 507(b)(14) of the Act.

(9) Items to be required at the discretion of the regulatory authority are identified in Section 779.15(b). Information on recharge, discharge and storage characteristics may be necessary to enable the regulatory authority to make the assessment required by Sections 507(b)(11) and 510(b)(3) of the Act, and to determine whether the applicant will meet the standards of Sections 508(a)(13) and 515(b)(10)(D) of the Act. In addition, other water quality and quantity data may be required for the purposes of Sections 507(b)(11), 508(a)(13), and 510(b)(3) of the Act.

§ 779.16 Surface water information.

Authority for this Section is Sections 102, 201(c), 501(b), 503, 504, 507(b), 508(a), 510, 515 and 517 of the Act. Information collected under this Section will enable the regulatory authority to make the assessments required by Sections 507(b)(11) and 510(b)(3) of the Act and to determine whether the applicant can comply with Sections 816.13–.15, 816.41–.59, 816.61–.68, 816.71–.73, 816.79, 816.81–.88, 816.91–.93, 816.100–.106, 816.111–.117, 816.133, and 816.150–.180 of Subchapter K. In the proposed rule, this section covered both surface and ground water information. Requirements for the latter have been moved to and consolidated with Section 779.15 in the final rule.

Information required by this Section will establish the base-line surface water characteristics of the mine plan and adjacent areas. The Office has decided that the scope of this Section should cover the entire mine plan and adjacent area, because of the widespread impacts to the hydrologic balance that mining operations can cause, is explained in more detail in the Preambles of Sections 701.5 and 779.13. Moreover, this knowledge is needed for the regulatory authority to make the cumulative impact assessments required by Sections 507(b)(11) and 510(b)(3) of the Act and 30 CFR 786.19(c).

Section 779.16(a) of the final rules lists the minimum general surface water characteristics that must be described in the application. The name of the watershed which will receive discharges from the proposed operation is expressly required by Section 507(b) of the Act. The location of surface water bodies, discharges into them and their drainage systems are required under Sections 507(b)(11), 507(b)(14), 508(a)(5), 508(a)(13) and 510(b)(3) of the Act, so that the regulatory authority can understand the complex relationships in the area's hydrologic balance.

Some commenters objected to requiring a description of all streams, suggesting limitation to only perennial streams. This was not done, because the Act and Subchapter K require regulation and protection of all significant streams and springs without such a limitation. (*See*, e.g., Sections 507(b)(10), 507(b)(14), 508(a)(5), 508(a)(13), 515(b)(2), 515(b)(4), 515(b)(8), 515(b)(10), 515(b)(15)(c)(iv), 515(b)(18), 515(b)(22)(D) of the Act, and 30 CFR 816.43, 816.44 and 816.57.) Detailed knowledge of all water movement in the area is necessary so that the regulatory authority can insure that the proposed operations are designed to provide for adequate control of all surface drainage.

Section 779.16(a) of the proposed rules required that surface waters be described "throughout the year." Many commenters objected to this, asserting that it was unnecessary to have such a description for every day or week of the year and that the needed data would be very expensive. Some commenters disputed the cost impacts of this requirement, pointing out that it could be met through the use of seasonal-frequency data from which reasonable extrapolations could be made to estimate water drainage characteristics for the full year.

In the final rule, the Office has specified that the description of surface water systems be sufficient to describe seasonal variations in water quality and quantity. This is the minimum requirement of frequency allowed by the Act. (*See* Section 507(b)(11), of the Act.) This language should clarify data collected daily or weekly for an entire year is not necessarily required. Moreover, it will allow for the use of extrapolation, by modeling or other reasonable predictive tools, from existing data in the same or similar watershed area to provide for the description of the mine plan and adjacent areas.

A similar modification was made in Section 779.16(b)(1), eliminating use of the phrase ". . . for a minimum of one water year . . ." in the proposed rule. As commenters pointed out, that requirement was arbitrary, because more or less than one water year of data may be needed to characterize accurately the true seasonal variability of surface water flows. Moreover, as discussed above, it may be possible to extrapolate by predictions from existing data at other locations to describe water flows in the mine plan and adjacent areas.

Section 779.16(b)(1) in the final rules requires identification of critical low- and peak-flow discharge rates sufficient to identify their seasonal variability. This information is important to provide the regulatory authority with sufficient information on critically low volumes of water, so that effluent discharges of pollutants from the proposed operations do not exceed the assimilative capacities of those waters. Information on peak flows is needed to ensure that structures and diversions are adequate to hold, pass or divert around those flows where allowed under Subchapter K. (*See e.g.*, 30 CFR 816.43(a), (b), (f)(2); 816.44(b), (d); 816.45(e); 816.46(c), (d), (g), (l), (j), (k); 816.49; 816.71(d); 816.72(d),

816.73(b), (c); 817.74(d), (f); 816.83(b); 816.85(a); 816.92(b); 816.93(a), (c); 816.102(a)(2)). Peak flow information also is needed to determine if operations will be safeguarded from flooding. In the final rule, the Office accepted the suggestion of several commenters that the description of critical low and peak flows be based on identification of "discharge rates", rather than "depth and rate of flow" specified in the proposed rule, because *discharge* rates are the critical issue.

Section 779.16(b)(2) lists the minimum types of surface water quality data that must be included in permit applications. It is expected that the sampling and analytical procedures used to provide the information will be done according to standard methods, identified in 43 *FR* 41695 (September 18, 1978).

Section 779.16(b)(2)(i)–(ii) requires a description of total suspended and dissolved solids contents as expressly required under Section 507(b)(11) of the Act. Section 779.16(b)(iii) and (iv) requires a description of acidity and pH, so that the regulatory authority can determine whether special precautions are necessary with respect to acid mine drainage from the proposed operations.

Regarding acidity determinations, the Office disagreed with comments suggesting that these are redundant given that pH description must also be provided. See, for example:

U.S. Environmental Protection Agency 1976c—Quality criteria for water, U.S. Environmental Protection Agency, pp. 178–182.

Caruccio, F. T. 1968—An evaluation of factors affecting acid mine drainage production and the groundwater interactions in selected areas of western Pennsylvania, in second symposium on coal mine drainage research, Mellon Institute, Pittsburgh, Pa., Bituminous Coal Research, Inc., Monroeville, Pa., Preprint, pp. 107–151.

Total iron concentrations of surface water is to be described under Section 779.16(b)(2)(v), because knowing the pH and acid content, the regulatory authority needs to ensure that the proposed operation will include sufficient protection with respect to iron-laden and mine drainage which has been a pervasive problem in large areas of the coal regions, and which is specifically regulated under Section 816.42(a)(7). In addition, dissolved iron descriptions are being required, because it is the most toxic form of iron with respect to aquatic life. See, for example:

U.S. Department of the Interior. 1975.—Acid mine water, a bibliography with abstracts, U.S. Department of the Interior, Water Resources Information Center, WRSIC 75-202. (564 pages), at pp. 62, 279.

U.S. Environmental Protection Agency. 1976c.—Quality criteria for water, U.S. Environmental Protection Agency, pp. 78–81.

Warner, R. W. 1973. Acid coal mine drainage effects on aquatic life, in Hutnik, R. J., and Davis, Grant, editors, Ecology and reclamation of devastated land, Volume 1, Gordon and Breach, New York, pp. 227–236.

Total manganese concentrations are required under Section 779.16(b)(2)(vi), because this parameter may need to be specifically accounted for in treatment under Section 816.42(a)(7). Finally, as revealed in the technical literature, coal mining operations may release other types of water pollutants into surface waters (USEPA, 1976a, pp. 51–60). Therefore, Section 779.16(b)(2) (vii) is included to enable the regulatory authority to require additional water quality testing to account for other pollutants, if necessary.

Several commenters objected to the economic impacts of the requirements of proposed Section 779.16, although others suggested both that the levels of costs would not be excessive, if the provisions were reasonably administered, and that the commenters asserting high costs used arbitary assumptions. Most of the commenters objecting to the economic impact of proposed Section 779.16 focused on the requirements for "one water-year of data." As explained above, that has been replaced in the final rule to allow for a much lower field data collection effort on a national basis.

To the extent that the final rules impose significant costs on the industry, it is believed that they are both necessary and tolerable. As one commenter showed, much of the data required can be obtained well below estimates of some commenters, through careful selection of sampling sites, equipment and methodologies. Moreover, for those persons qualifying as small operators under 30 CFR Part 795, the Government will bear the costs of collecting much, if not all, information required by Section 779.16. In addition, under Section 779.13, any applicant can choose to utilize Government resources for data on areas outside the mine plan area.

This, in combination with 30 CFR Part 795, should drastically reduce the burden to the small Eastern/Appalachian operator, since the permit area for small mines will ordinarily be coextensive with the mine plan area. Thus, applicants which fit into this category can utilize 30 CFR Part 795 to obtain data for the mine plan area and governmental sources under Section 779.13 for other portions of the general area. While some costs will be incurred by the industry to satisfy the requirements of Section 779.16, it is believed that the benefits obtained will outweigh the burdens involved. (*See*, H.R. Report No. 95-218, 95th Cong., 1st Sess. at 91, 113–114, 1977.)

§ 779.17 Alternative water supply information.

Authority for this Section is Sections 102, 201, 503, 504, 507(b), 508(a), 510, 515, 517, and 717 of the Act. This Section requires identification of water sources that could be interfered with by proposed surface mining activities and the steps the applicant will take to provide alternative water sources to those affected. Information under this Section will enable the regulatory authority to make the assessments required by Sections 507(b)(11), 508(a)(13), and 510(b)(3) of the Act and to determine if the applicant will comply with Section 717(b) of the Act and 30 CFR 816.41 and 816.54.

1. Commenters objected to the scope of the proposed rule, which required coverage of water sources throughout the mine plan and adjacent areas. The Office did not alter this in the final rules. As explained in the Preamble to Section 701.5, surface mining activities can have a wide-spread impact on the hydrologic balance, extending for considerable distance from the mine site itself. Moreover, Sections 507(b)(11), 508(a)(13), and 510(b)(3) of the Act require scrutiny of the proposed operation with respect to its impacts on hydrology throughout the general area.

2. A commenter's suggestion that the phrase "legitimate use" be replaced with "beneficial use" was rejected, as the term "legitimate" is derived directly from the Act. Another suggestion that Section 779.17 be qualified to provide for a waiver of the requirements when there is no legitimate use of water within the mine plan or adjacent area, was rejected as redundant. The Section only operates if legitimate uses exist or are likely to exist within the mine plan or adjacent area during the life of the proposed operations.

3. The proposed rule was edited to shorten it in the final rule. No substantive change was intended, however.

§ 779.18 Climatological data.

This Section describes specific climatological data which, at the request of the regulatory authority, must be submitted as part of the environmental resources information in each permit application. The authority for this Section is found in Sections 102, 201, 501(b), 503(a), 507(b)(12), and 508(a)(5), (9) and (10) of the Act. These data may be needed by the regulatory authority, in evaluating whether the applicant will be able to comply with the performance standards of Subchapter K.

1. A commenter suggested that the words "when requested by the regulatory authority" be deleted. This was rejected because Section 507(b)(12) re-

quires climatological data only "when requested by the regulatory authority." To demand such data in lieu of discretionary compliance would exceed the intent of the Act.

2. Commenters suggested that if climatological data is available in areas adjacent to the proposed mine permit area the regulatory authority should accept such data. It is not the intention of these regulations to levy unnecessary burdens upon the permit applicant. Should appropriate climatological data be available from Federal, State or other reliable sources, such data may be used.

3. A commenter suggested that the area for which climatological data is requested be changed from the "mine plan area" to the "proposed permit area." The Office considered two alternatives. First, the Office considered whether to make changes recommended by the commenter, who stated such changes would parallel the legislative language in Sections 507(b)(9), (11) and (12) and 515(b)(10) of the Act. These Sections address permit requirements and environmental performance standards within the permit area and associated on or offsite or adjacent areas. The second option was to make no change in the proposed permanent language. Section 507(b)(12) of the Act requires that climatological factors peculiar to the locality of the land to be affected may be requested by the regulatory authority.

No change in the proposed language was made for several reasons. First, by definition, permit area is but a portion of the mine plan area and to request data relative to the permit area would require individual monitoring at each site; this being contrary to the previous decision that data available from adjacent areas may be utilized in the permit application. Second, the authorities cited in the first alternative refer primarily to hydrology requirements. Because of the nature of climatologic factors and their impact on the various performance regulations including hydrology and fugitive dust control, a broader area of influence must be considered.

4. Comments suggested that Section 779.18(c) be rewritten to comply with Section 507(b)(12) of the Act. The Office accepted the suggestion to insert the word "ranges" following "seasonal temperature" to comply with the intent of the Act. Data pertaining to and describing seasonal temperature ranges will provide adequate information in most situations to evaluate the climatological factors which have a bearing on the performance standards of Subchapter K.

5. Several commenters questioned the authority of the Office to expand the climatological data requirements to include "total suspended particulates" when these data were not specifically requested by Section 507(b)(12) of the Act. The Office has decided to delete this mandatory aspect of the regulations. Section 779.18 of the regulations is intended to implement Section 507(b)(12) of the Act which provides that the regulatory authority may request the applicant to submit documentation on the average seasonal precipitation, the average direction and velocity of prevailing winds, and the seasonal temperature ranges. Information regarding total suspended particulate levels may be required under Section 780.15.

§ 779.19 Vegetation information.

Authority for this Section is Sections 102, 201, 501(b), 503, 504, 508(a)(2)(B) and (C), 508(a)(3), (4) and (5), 510(b)(2) and 515(b)(19) of the Act. This Section of the regulations will require that the applicant submit, if required by the regulatory authority, a map or aerial photograph delineating vegetative types in the proposed permit area, reference areas when applicable and certain adjacent areas. These requirements are consistent with Sections 816.111–816.117.

The regulatory authority may require maps or aerial photographs and narrative descriptions of the existing vegetation in the permit application for the following reasons:

(i) To assist in evaluation of the natural vegetative capability of the site and to determine if the operations will be conducted in accordance with Sections 816.45–816.46, 816.97, 816.111–816.117, and 816.133 of Subchapter K;

(ii) To characterize quantitatively the vegetation in the reference area and permit area, for establishing comparability of the permit area;

(iii) To identify those species of vegetation that may contribute to important postmining land-use values of the permit area, by serving as seed sources for revegetating the land or as important habitats for fish and wildlife;

(iv) To help in evaluating the present and potential productivity of the site, which must be described in the application under Sections 508 (a)(2) and (a)(4) and 515(b)(2) of the Act; and

(v) To establish premining site conditions for wildlife and fish habitats.

Technical literature used in the formulation of this Section was as follows.

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5. Braun, E. L., 1950. Deciduous forest of eastern North America, Blakiston Co., Philadelphia.

6. Carter, V. A., and others, 1977. Wetland classification and mapping in western Tennessee, Proceedings of 2nd Annual William T. Pecora Memorial Symposium, Oct. 25–29, 1976, Sioux Falls, S. Dak., pp. 213–234.

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8. Cowardin, and others, 1977. Classification of wetland and deep water habitats of the United States. An operational draft. Fish and Wildlife Service, Dept. of Interior.

9. Curtis, J. T., 1959. The vegetation of Wisconsin, an ordination of plant communities, Univ. of Wisconsin Press, Madison, 657 pp.

10. Daubenmire, R. F., 1968. Plant communities, a textbook of plant synecology, Harper and Row, New York, 300 pp.

11. Daubenmire, R. F. and Daubenmire, J. B., 1968. Forest vegetation of eastern Washington and northern Idaho, Washington Agricultural Experiment Station Technical Bulletin 60, 104 pp.

12. Daubenmire, R. F., 1973. Comparison of approaches to the mapping of forest land for intensive management, Forestry Chronicle, 49:87–91.

13. Davis, J. A., 1977. An ecosystem classification of New York State for natural resources management, New York Fish and Game Journal, 24 No. 2, pp. 129–143.

14. Deitschman, G. H., 1973. Mapping of habitat types throughout a national forest, USDA Forest Service General Technical Report INT–11, 14 pp.

15. Goff, F. G., 1967. Methods used in field investigations of vegetation and soils, in Milfred, C. J. and others, Soil resources and forest ecology of Menominee County, Wisconsin, Univ. of Wisconsin Geological and Natural History Survey Bulletin 55, pp. 187–189.

16. Kuchler, A. W., 1964. Potential natural vegetation of the coterminous United States, (Map and Manual), New York, Am. Geographic Society, 116 pp.

17. Kuchler, A. W., 1967 Vegetation mapping, New York, Ronald Press Co., 472 pp.

18. Pfister, R. D., and others, 1977. Forest habitat types of Montana, USDA Forest Service General Technical Report No. INT–34, 174 pp.

19. Radford, A. E., 1977. Natural area and diversity classification system: A standardized scheme for basic inventory of species community and habitat diversity, Univ. of N. Carolina Student Stores, Chapel Hill, 70 pp.

20. Society of American Foresters, 1954. Forest cover types of North America, Report of Committee on Forest Types, Bethesda, 67 pp.

21. Wharton, C. H., 1978. Natural environment of Georgia, Georgia Dept. of Natural Resources, 227 pp.

22. Wielgolaski, F. E., 1972. Vegetation types and plant biomass in tundra, Arct. Alp. Research 4:289–306.

23. Zedler P. H., and Goff, F. G., 1973. Size-association analysis of forest succes-

sional trend in Wisconsin, Ecol. Monogr. 43:(1), pp. 77-94.

Vegetation maps, if required, should be of a scale of 1:24,000 or larger, and aerial photographs should be a comparable scale. Mapping units should be chosen to delineate homogeneous vegetative areas, but units should be field checked for accuracy before being submitted with the application.

Quantitative vegetation sampling, on the ground, is useful in establishing species frequency, density and productivity for vegetation map units (Kuchler, 1964, p. 375). Quantitative sampling techniques differ from rangeland to forest to tundra (Kuchler, 1967, chapters 29 and 30). The following references from the foregoing list are believed to be most useful in describing quantitative techniques: Numbers 1-5, 7, 9, 12, 14, 16-17, 19-24.

1. A commenter suggested that this Section be deleted on the grounds that the information requested would be provided under Section 779.22. The information to be provided under Section 779.22 pertains to the land uses and use capabilities of the proposed permit area. The information required by Section 779.19 is more detailed information relating to species diversity and ground cover and will be needed by the regulatory authority to determine the ability of the operator to revegetate the area. Information provided under Section 779.19 is likely to be helpful in completing the analysis required by Section 779.22 and should be used accordingly. Since the information of the two Sections is intended to be complementary and not duplicative, this Section has been retained.

2. Some commenters contended that landownership and control of the reference area would be a problem. In recognition of the difficulties that may result from requiring use of a reference area, the Office has developed the regulations to provide for the use of reference areas or, when approved by the regulatory authority, for the use of other technical guidance procedures to measure and determine success of revegetation. Thus the information required by this Section will relate directly to the method of measuring revegetation proposed by the operator and approved by the regulatory authority.

3. Numerous commenters suggested that this Section make reference to Section 816.116(d), which exempts operations of 40 acres or less from using reference areas. This Section and Section 816.116 have, as a result of this commenter's suggestion, been rewritten and reference areas are now one of the options that may be approved by the regulatory authority for use in determining success of revegetation authority for use in determining success of revegetation.

4. Several commenters argued that second- and third-growth hardwood forests, such as those in Appalachia, do not provide adequate ground cover to control erosion and that reference areas should therefore not be required. They further contended that these slow-growing species do not have growth rates to provide quick ground cover which will prevent erosion while the new seedlings are maturing, and that grasses or other quick-cover plants must be established to stabilize the area while plant succession occurs and the area is stabilized by the post-mining vegetation. As discussed in previous paragraphs, the reference area requirements have been modified. Also, Sections 816.116 and 816.117 set forth minimum ground cover and seedling number requirements that are intended to minimize erosion.

5. A commenter suggested that aerial photos as well as maps have utility when delineating vegetative communities. It was contended that the use of aerial photos should be provided for in the regulations. In recognition of the utility of aerial photos, the regulations have been changed to provide for the use of a map or aerial photos when required by the regulatory authority.

6. Commenters suggested that a vegetative map should always be required. Since the most effective means of describing the vegetative cover and the adequacy of the information, whether by a map, aerial photo or narrative description, must be determined on a case-by-case basis, the Office decided that the regulatory authority needs the option to determine what descriptive materials are necessary to describe adequately the vegetation of the area to be disturbed.

7. Several commenters contended that this section should require information on vegetative cover, density and species diversity. The regulations require vegetative cover and productivity, as related to revegetation success, as well as the option of requiring a narrative description of the vegetative communities. Thus, the regulatory authority can require information relative to density and diversity. This information may not be essential to the permit review in some cases, so the Office has decided to leave the degree of detail to the discretion of the regulatory authority.

8. Commenters suggested that vegetation data on the adjacent area would not be necessary in the permit application because the land is to be restored to the premining condition, and consequently the adjacent area would not be affected. Since the regulatory authority will be required to make an informed decision on wildlife habitat as well as on any threatened and endangered species or their habitat, the requirement for vegetation data for adjacent areas is retained.

9. Commenters suggested that reference areas should be denuded and then revegetated using the same species called for in the mining plan. They contended that denuding would demonstrate the ability of the site to revegetate and would be a good standard to use in measuring success. Since denuding the area would not illustrate ground cover equal to or better than that which would occur on a nondisturbed area and because denuding would expose additional acreage to wind and water erosion, the suggestion has not been accepted.

§ 779.20 Fish and wildlife resources information.

Authority for this Section is found in Sections 102, 501(b), 503, 506, 507(b)(11), 508(a), 510(b) and 515(b) of the Act, the Endangered Species Act (ESA) and regulations of the U.S. Fish and Wildlife Service adopted under the ESA, and the Fish and Wildlife Coordination Act.

Under Section 779.20(a), each permit application must include a study of fish and wildlife and their habitats within the mine plan area and the adjacent areas where effects on such resources may reasonably be expected to occur. The area to be studied will, at a minimum, be the area to be covered by the mine plan, and may extend beyond the mine plan area to adjacent areas in which fish and wildlife and their habitats may be affected by the mining operation.

Under Section 779.20(b), permit applicants must contact the regulatory authority prior to initiating studies. The regulatory authority, in consultation with appropriate fish and wildlife agencies, will determine the scope of studies.

The regulatory authority will make the determinations of the areas of study and the required detail of study in accordance with the procedures in Section 779.20(c). This Section requires that all such determinations be based on the availability of three sources of information which include existing fish and wildlife resource publications, and written recommendations from State or Federal agencies having responsibilities for fish, wildlife, or habitats which may be affected by the mining operation.

The studies required by this Section will enable the regulatory authority to determine whether the applicant will be able to comply with Section 816.97 of the performance standards. All permit applicants must comply with this Section.

Numerous comments were received on this Section of the proposed regulations. Commenters' recommendations are discussed as alternatives in the

context of the major issues identified, and final regulations. The following issues were raised by commenters.

1. Commenters addressed whether fish and wildlife studies are necessary or appropriate to implement provisions of the Act. Numerous commenters addressing this issue supported the need for studies of fish and wildlife. Other commenters recommended the following alternatives.

(a) Commenters suggested that studies of fish, wildlife, and their habitats are not appropriate, unless harm to fish and wildlife or their habitats has been identified by the regulatory authority. Commenters added that requirements of Section 515(b)(24) do not apply unless adverse effects have been identified, and recommended that permit application requirements of Section 779.20 apply only if requested by the regulatory authority. Other commenters recommended deletion of Section 779.20 from the regulations stating that such studies are not specifically required by the Act.

Commenters stated that mining will be conducted under permits as provided by the Act; therefore, studies are inappropriate outside the permit area. These commenters recommended that Section 779.20 be changed to confine the area of study to the permit area rather than the mine plan area and adjacent areas in which wildlife may be affected.

(b) The Office has determined that the regulatory authority must have the results of the study to determine the potential adverse effects of mining on fish and wildlife. The requirements of Section 780.16 are necessary to meet Section 515(b)(24) of the Act which requires the use of "best technology currently available" to minimize the adverse effects of mining on fish, wildlife, and related environmental values and to enhance such resources where practicable. Further, the Endangered Species Act precludes actions adversely affecting critical habitats of threatened or endangered species. Compliance with these requirements cannot be evaluated without the information required in this Section of the regulations. The study may consist of the compilation of existing information, as well as site-specific information provided by the applicant.

The regulatory authority will then determine, with appropriate guidance of wildlife agencies, what additional new information will be needed to understand fully the type and degree of adverse effects which may be anticipated. The study, therefore, is the basic means by which potential adverse effects are determined.

(c) The Office has determined that, although the application is for the permit area, effects on fish, wildlife, or related environmental values will not be confined necessarily to that area. This is especially true when fish or wildlife utilize the permit area or the mine plan area as part of their total habitats.

When a wildlife habitat component, such as a water, food, or cover is reduced or destroyed, the utility of the entire habitat is limited or destroyed depending on the availability of such components elsewhere in the habitat. For example, if the only available water source for a wildlife population occurs in a permit area and this water source is destroyed or impaired by mining, the entire habitat becomes unusable, because available water would be reduced or eliminated. (Odum, 1971, Fundamentals of Ecology, pp. 117-125; Moore and Mills, 1977, An environmental guide to western surface mining, Part II, pp. III 104-133.)

Moreover, disturbances of the permit area may displace fish and wildlife into surrounding areas, thus increasing population densities in those areas. A given area of habitat will support only a given number of most kinds of animals. When animal populations are already high, this over-population resulting from displacement of wildlife from mine sites could cause increased density-dependent mortality through specific or inter-specific competition. Such density-dependent mortality is likely, especially in cases of highly territorial wildlife species. (Odum, 1971, pp. 195-202, 209-211.)

In addition, offsite impacts such as water quality degradation, and erosion may affect fish population outside the permit area and mine plan area. (Moore and Mills, III-109-139.) The Act mandates that such effects on fish, wildlife, and their habitats be minimized regardless of where such effects may occur.

Such information may be necessary for the mine plan, as well as the permit area, and may be usable for subsequent permit applications for the operation, thus reducing study needs for future permits. For further discussion of this question in the context of the definitions of mine plan area, permit area, and adjacent area, see the preamble discussion for Section 701.5.

2. Commenters stated that reclaiming land to other uses would be incompatible with fish and wildlife use. Therefore, studies on land designated for uses other than fish and wildlife would be non-productive. According to commenters, the requirements of Section 779.20 should be restricted only to those operations where the postmining land use will be fish and wildlife.

The Office has concluded that Section 515(b)(24) of the Act requires the minimization of adverse effects from all surface coal mining and reclamation operations. This performance standard is mandated regardless of postmining land uses. The Act also requires that postmining land uses employ best technology to minimize adverse effects and enhance wildlife where practicable. Adverse effects of incompatible land uses may be expected to be greater than the uses which are compatible with wildlife. The recommendation made by commenters would relieve operators from minimization of adverse effects of incompatible land uses. However, the Office finds that this argument does have some merit and has attempted to accommodate it to some extent. Exemption from studies cannot be granted for the reasons already stated above. However, the performance standards make allowances for the regulatory authority to exempt certain enhancement practices for wildlife where postmining land uses are incompatible with wildlife (Section 816.97(d)(11)).

3. Commenters addressed the degree of detail required for studies pursuant to Section 779.20. Commenters stated that fish and wildlife numbers and behavior are very difficult to study, and are not affected directly from mining, as much as they are indirectly through disturbance of their habitats. Therefore, requirements of Section 779.20 should emphasize studies of habitats, rather than populations of fish and wildlife.

Commenters also recommended that Section 779.20 include study of lesser forms of invertebrates as well as higher animals. The commenters state that such lesser forms are important to food chains and ecosystems balance.

The Office agrees that study of habitats is very important to minimization of effects resulting from habitat disturbance and has modified Section 780.16 of the reclamation plan rules, to include fish, wildlife and their habitats. Studies of populations may be required only for species of fish and wildlife identified pursuant to Section 780.16(c). Food chains, including lesser forms of life, are often very important parts of habitats. (Odum, 1971, pp. 369-375.) The addition of the term "habitat" in Section 779.20(a) extends the requirements to all animals or habitat components important to the well-being of fish and wildlife, including lower forms important in food chains. Therefore, further change in the wording of Section 779.20 to emphasize study of lower forms is not necessary. The consultation process should identify and require studies of those lesser forms which are threatened or endangered, or are considered essential to support other higher forms of special interest species identified in Section 780.16(c).

4. Commenters stated that applicants cannot conduct fe Office has de-

termined that there is no authority in the Act to waive requirements of Section 779.20 on the basis of land ownership or control. It is incumbent on the operator to comply with the minimum requirements of the Act and to do all things necessary to assure his ability to comply. This includes obtaining access needed to comply with requirements of Section 515(b) (24) of the Act.

5. Commenters recommended that Section 779.20 require that studies only include available published information. Commenters' rationale for this recommendation is that it is too costly to collect new information. However, no information concerning specific costs of studies was supplied by the commenters. Other commenters recommended that Section 779.20 provide for waiver of studies when existing information is adequate. Still other commenters recommended that Section 779.20 be revised to require studies to include data other than that available only from secondary sources. Specifically, new site-specific data should be required.

The Office agrees that a minimum amount of site-specific information almost invariably is required to determine the applicability of secondary information to specific sites. As stated in the preamble for Section 779.20 of the proposed regulations, the Office has changed the wording of Section 779.20 to indicate in Paragraph (c) that site-specific information is required in each permit application. However, the Office has concluded that the regulations as written provide adequate discretion for the regulatory authority to determine levels of detail for studies based on the adequacy of existing information.

Additionally, although site-specific information is required by Section 779.20(c), the requirements concerning the area and detail of study should ensure that most applicable information, for the entire area in which fish and wildlife and their habitats may be affected, will be collected and supplied with the initial permit application. This will have the effect of reducing needs for studies for subsequent permit applications within a given mine plan area.

6. Commenters questioned the allocation of authority for determining the level of detail required in fish and wildlife studies. Eight different recommendations were made by the commenters.

Commenters recommended that, since State wildlife management agencies have the necessary expertise to determine "best technology currently available", the scope of the study conducted pursuant to Section 779.20 should be determined by these agencies.

Other commenters recommended that because State wildlife agencies often do not have authority which extends to species not on the respective State game lists, and since State conservation agencies have greater capability in the area of all wildlife species, then the level of detail should be determined by the State conservation or resource agency.

Other commenters stated that State agencies do not have responsibility or authority over management or protection of migratory species, endangered species, or other Federally-protected species of fish and wildlife. Therefore, State wildlife agencies and Federal wildlife agencies should determine the scope of studies for species within their respective areas of responsibility.

Commenters recommended that State wildlife agencies and State and Federal land management agencies should determine the level of detail for studies, since both have wildlife management or habitat management responsibilities, authorities, and expertise.

Commenters suggested strengthening Section 779.20 by providing specific minimum study requirements, sufficient to remove all discretion of the regulatory authority. These commenters stated that leaving discretion to regulatory authorities without minimum standards provided in the regulation will not ensure that "best technology currently available" will be used as required in the Act.

Commenters recommended that the level of detail be determined solely by the regulatory authority. Commenters recommended that levels of detail be determined on a case-by-case basis, because of varying species, topography, climate, and other factors would create such diverse circumstances that one set of study guidelines could not be made to apply. Commenters recommended that Section 779.20 be modified to reduce the level of detail required in wildlife studies.

The final regulations provide, in Section 779.20(c), that State wildlife management agencies will be consulted in the process of determining levels of detail of studies, and that Federal wildlife agencies be consulted with respect to their specific wildlife protection or management role. Further, Section 779.20 provides for consultation with State and Federal land management or conservation agencies when habitats administered by such agencies may be affected by mining operations.

The Office agrees that State wildlife agencies have expertise to aid the regulatory authority in determining the scope of studies. However, in some States, the State wildlife agency does not have authority to manage nongame fish or wildlife species. If such authority exists, it may rest with other agencies within a State such as a State conservation agency. Therefore, the expertise and responsibilities of other agencies which may have broad authority for nongame wildlife species must also be considered in the determination of levels of details for wildlife studies.

Further, many Federal or State agencies manage lands which contain important wildlife habitats which may be affected by mining. Such agencies include State and Federal forest management agencies, park management agencies, and State or Federal multiple-use land management agencies. Close coordination will be required to ensure that best technology is utilized in protection, enhancement, or restoration of such habitats.

The final regulation allows studies to be designed on a case-by-case basis for each mine area. The discretion of the regulatory authority is not, however, absolute, in that detail of studies is required to be in accordance with written guidance from agencies having responsibilities and expertise in fish and wildlife matters. It is the intent of the regulations that guidance obtained from agencies consulted be utilized in the determination of the area to be studied and the detail with which studies are conducted. This procedure should provide needed flexibility to use best technology to protect fish and wildlife, and ensure that information provided by the consulted wildlife experts may be utilized to minimize adverse impacts as required in Section 515(b)(24) of the Act.

7. Comments were received which addressed whether certain mining operations or activities should be exempt from Section 779.20. Some commenters recommended that small mine operations be exempt from the requirements of Section 779.20 because of high cost. No cost estimates were given, however.

Other commenters recommended that small operations should be exempt on the basis of area disturbed, rather than tons of coal mined, since surface acres of disturbance more directly relates to effects of mining on fish and wildlife. Other commenters recommended that all mining operations in mining-intensive areas or areas previously disturbed by mining be exempt from the requirements of Section 779.20.

Other commenters recommended that the Office provide that no mining operation, regardless of size, be exempt from requirements of Section 779.20. These comments stated that many small operations have significant effects on environmental values, and that exemption of such operations would be contrary to the Act.

The Office has decided that all operations must comply with this Section of the regulations. Many mining operations may be classified as "small". Large numbers of such operations disturb significant cumulative areas of land. Further, the cost of fish and wildlife studies necessary for permit applications is estimated to range from less than one additional cent to two cents per ton of coal mined, for any alternative for which costs were analyzed, according to the Office's Regulatory Analysis. Based upon this analysis and the requirements of the Act, the Office has decided that all operations, regardless of size, must comply with Section 779.20.

The Office believes that where wildlife use has changed as a result of intensive mining or previous disturbance of habitat, practicability for enhancement, pursuant to Section 515(b)(24) may be very high. Restoration in areas which have been significantly disturbed by past mining is an important aspect of the Act as evidenced in Title IV. Exemption of areas from the requirements of Section 779.20, solely on the basis that intensive mining has occurred in the past or a given tract of land was previously disturbed by mining, would not be in compliance with requirements of Section 515(b)(24), and no authority can be found in the Act to provide such exemptions. Therefore, the final regulations provide no exemptions from the requirement to perform studies of fish and wildlife and their habitats.

§ 779.21 Soil resources information.

Authority for this Section is found sections 102, 201(c), 501(b), 503(a), 504, 507(b)(9) and (11), 508(a), 510(b), and 515(b) of the Act. This Section requires that permit applications contain descriptions of the soil resources of the mine plan area, through a soil survey, to enable the regulatory authority to make determinations under Sections 515(b)(2), (4), (5) and (6) of the Act. Also, the applicant must submit results of analysis, trials and tests required by the regulatory authority, where the applicant is proposing to use selected overburden materials instead of, or as a supplement to, topsoil in the proposed reclamation process. This information is necessary to enable the regulatory authority to determine if the applicant can comply with the performance standards of Sections 816.25, 816.111–816.117 and 816.133 of Subchapter K.

The requirements of Sections 779.21 and 779.26 of the proposed regulations were combined into Section 779.21, and Section 779.26 was deleted. The two Sections related specifically to the topsoil-removal requirements of Section 816.22 and the revegetation requirements of Sections 816.111–816.117. By combining the Sections, OSM intends to clarify that relationship. The requirements of the proposed Section 779.21 are now in Section 779.21(b). Also, additional changes in this section resulted from the Office's consideration of changes proposed by commenters.

Several commenters argued that a soil map is only a visual depiction of a soil survey. Some stated that cooperative surveys and associated maps should provide adequate soil-resource information, while others contended that requiring a soil map exceeds the authority of the Act except when prime farmland is present. Other comments suggested that soil information requirements should be limited to the information in the applicant's possession or in published reports.

The Office concurs that a soil map does not contain adequate narrative on which the regulatory authority can base a decision, and that a soil survey composed of a map and supporting soil-resource descriptions contain adequate information upon which capability and potential productivity can be reliably predicted.

Since commenters were not able to suggest a way by which the requirements for a discussion of the characteristics of a mine plan area, required by Section 508(a)(3) of the Act, could be satisfied by an applicant if soil-survey information was not provided, the Office has determined that the applicant should provide adequate soil-survey information, to include soil identifications, soil descriptions and present and potential productivity of existing soils, on which the regulatory authority can make a determination of the adequacy of the reclamation plan. Further, the comments suggesting that soil-information requirements be limited to information in the applicant's possession or in published reports have been rejected because this information can be obtained by qualified personnel using standard soil-survey procedures and is to be used as the basis for determining productivity. As explained in the preamble discussion of the definition for "soil survey" in Section 701.5, it is intended that soils information be obtained in accordance with the procedures of the National Cooperative Soil Survey.

Commenters suggested the regulations require that the soil map be prepared by a qualified professional soil scientist. The commenters contended that soil maps will not be meaningful unless prepared by competent people. The Office feels the current requirement that map units be prepared according to the standards of the National Cooperative Soil Survey is adequate to assure conformity to established standards so that maps can be readily interpreted and are reliable.

§ 779.22 Land use information.

Statutory authority for this section is found in Sections 102, 201(c), 501(b), 507(b)(14), 508(a)(2), through (5), (8), (10), (13) and (14), 510(b)(2) and (10) of the Act. The following technical literature was used in developing this section:

1. Toth, R., Criteria in Land Planning and Design, Landscape Architecture, 62(1), 1971.

2. Moore, G.T., Emerging Methods in Environmental Design and Planning. MIT Press, Cambridge, Mass. 1970.

3. Johnson, A.H., et al., Landscape Analysis for Ecologically Sound Land Use Planning. Dept. of Landscape Architecture and Regional Planning. University of Pa., Phil., Pa. 1978.

4. Thurow, C., et al. Performance Controls for Sensitive Lands. American Society of Planning Officials Planning Advisory Service. Reports No. 307, 308. Am. Soc. of Planning Officials, Chicago, Ill. 1975.

5. McHarg, I.L. Design With Nature, Natural History Press. Garden City, N.Y. 1969.

6. McHarg, I.L., Juneja, Narendra, Meyers, C.R., Jr., and Sutphin, D.F., 1968, The Least Social Cost Corridor for Richmond Parkway. (Prepared by Wallace McHarg Roberts and Todd, Philadelphia, Pa.) New York City Department of Parks.

The information required under this section is necessary to enable the regulatory authority to evaluate the applicant's plan to restore the affected area to the condition required by Section 816.133. The most cost-effective and least environmentally damaging land uses can be identified and developed to a large degree by identifying the area's characteristic properties and capabilities. (McHarg, 1969 p. 32; 55–65, 103–115; 127–151; Thurow 1975 p. 3 and McHarg et al., 1968, p. 2–4.)

Section 779.22 has been renumbered and relettered for greater clarity. In addition, the last sentence of proposed Section 779.22(b), description of uses preceding mining, has been moved to Section 779.22(b)(5) of these regulations. Other editorial, non-substantive changes have been made by the Office since this section was proposed.

As proposed, Section 779.22 required the listed information for lands within the mine plan area but 779.22(b) did not specify a geographic area. Section 779.22(a) now requires information only with respect to the permit area. This change was made to reduce the burden on the permit applicant and because the detailed data and analysis required by 779.22(a) is most necessary for the area to be mined within the permit term which is susceptible to change as a direct result of mining. Data on the area outside the permit area could change significantly during

the term of the permit without regard to mining activities and is more appropriately gathering as new areas are permitted. Section 779.22(b) calls for information on previous mining activities within the proposed mine plan area. A wider base information is necessary under this section in order to determine the cumulative impacts of the mining operations. This information is unlikely to change significantly during the permit term and should be used by the regulatory authority and the operator to assure that the new mining is conducted in a manner which, where possible, mitigates problems that were caused by previous mining activities. Section 779.22(c) also requires information for an area larger than the permit area. Information on existing land uses and classifications in the proposed mine plan area and adjacent area is necessary to make the findings required under Section 816.133 that the planned post mining land use is compatible with surrounding land uses, policies and plans. The information is more general than that required under Section 779.22(a) and its collection should not cause unreasonable burdens on the applicant.

A few commenters objected to a number of provisions in Part 779, including Section 779.22, stating that such voluminous data requirements are expensive and inflationary. The Regulatory Analysis has evaluated the costs of regulations within Part 779 which require data similar to that required by Section 779.22 (Sections 779.20, 780.16, 783.20 and 784.21, permit application requirements for fish and wildlife resources). The Regulatory Analysis evaluated a group of alternatives for these sections of the regulations ranging from a detailed survey of all species to less detailed inventories and/or plans. The incremental cost for these alternatives did not in any case exceed one cent per ton of coal. The land use information requirements of Section 779.22 require less detail than the most costly fish and wildlife requirement analyzed in Regulatory Analysis. Thus, it can be assumed that the incremental cost of Section 779.22 will not be significant, even allowing for uncertainty and error.

Section 779.22(a)(1) requires filing a map and supporting narrative describing the uses of the land existing at the time the application is filed. All significant uses within the proposed permit area should be described regardless of how small a geographic area the use or activity occupies. To the extent possible, the narrative should describe uses using the categories defined in Section 701.5. The historic use of the land also must be described if the pre-mining land use was changed within 5 years preceding the beginning of the proposed mining operation. Some commenters stated that there is no statutory authority for requiring a map. Section 779.22(a)(1) is specifically required by Section 508(a)(2)(a) of the Act, and such information is traditionally documented on maps. The Office believes such a map is a necessary and useful tool in comparing the pre-mining and proposed post-mining uses and will be required for making decisions under these regulations. Thus, the map requirement has been retained.

Some commenters suggested that a period of time should be added in Section 779.22(a)(1) to indicate how far back the historical use description must extend. Setting a specific time period could result in data not needed by the regulatory authority in some cases while in other cases failing to provide critical information. The Office believes that the regulatory authority should determine the appropriate period for information on historical use based on the nature of changes that have occurred and local conditions and trends. Thus, no specific time has been added to this subsection.

A few commenters suggested that the historic use of the land should be described where the pre-mining use was changed within the 20 years preceding the beginning of the proposed operation. They gave no basis for extension of this time period an additional 15 years. The Office believes that the additional time may be unnecessary in many cases for purposes of comparing uses, and could be burdensome to applicants. Therefore, this comment was not accepted and no change was made.

Section 779.22(a)(2) requires that the application include a narrative of the capability of the land to support a number of uses and a narrative of the productivity of the land within the proposed permit area. This information together with the environmental information required under this Part and the land use information required under Section 779.22(a)(1) should provide the foundation for a comprehensive analysis of the environmental, engineering and economic factors which must be molded into the complete reclamation plan.

Several comments were received on Section 779.22(a)(2)(ii). Some commenters suggested that this section reference the Soil Conservation Service of the Department of Agriculture as the source for productivity studies and yield data. Allowing the use of studies from public agencies should add flexibility and lower the costs of obtaining such data while maintaining reliability for use in decision-making. The Office has determined that a broader base of information is desirable. As a result, this section has been revised to reflect that the sources for such information may be the Soil Conservation Service, State agricultural academic institutions, or State natural resource or agricultural agencies.

Some commenters suggested that "average yield" should be defined. The Office considered defining this term or setting forth guidelines for determining average yield, but believes a definition is unnecessary. Average yield has a common meaning in the field of productivity studies and the Office intends that meaning to be applicable under this section.

Section 779.22(b) requires information on the mine plan area if it has been previously mined. The required information, if available, includes: type of mining method used, coal seams or other mineral strata mined, extent of coal or other materials removed, approximate dates of past mining, and land uses preceding mining. A few commenters stated that it may be difficult to ascertain the dates of past mining to any degree of accuracy. The Office recognizes that obtaining exact data of past mining may be difficult. Therefore, the Office had determined that only approximate dates need be provided. This change is reflected in Section 779.22(b)(5).

Some commenters suggested that determination of pre-mining uses may be difficult, particularly in cases where mining was completed many years prior to submission of an application. Some commenters suggested that such information be required "to the extent possible." The Office recognizes that information on pre-mining land use may not always be readily available but believes that reasonably accurate estimates of pre-mining land use can be obtained from local planning and zoning data and the records of county offices. The Office has determined that no additional language is necessary since this subsection already provides that information be submitted "if available."

Some commenters suggested a soil map requirement be added to Section 779.22 since soil maps would be useful in determining land productivity. The Office does not agree, however, because soil maps customarily describe land in terms of chemical and physical properties rather than in terms of uses of the land. Accordingly, this comment was rejected and no change was made.

Section 779.22(c) requires that the application contain a description of the existing land uses and land use classification (under local law) of the mine plan and adjacent areas. This information is necessary to enable the regulatory authority to make decisions on proposed alternative land uses, par-

ticularly the finding of compatability with existing land use policies and plans. The reader is referred to the Preamble discussion for Section 783.23 (Land Use Information for underground mining applications) which discusses the comments which led to the addition of this subsection.

Many commenters suggested that a number of revisions be made and language added to provide significantly greater protection for what are commonly termed "cultural resources." The principal suggested revisions and additions can be generally described as follows:

(a) in Part 776 (General requirements for coal exploration), add a requirement that the map showing areas to be substantially disturbed indicate existing archeological features;

(b) in Parts 779 (Surface mining permit applications—minimum requirement for information on environmental resources) and Part 783 (Underground mining permit applications—minimum requirement for information on environmental resources), add a new Section entitled "Cultural Resources Information." This Section would require a description of all known archeological, historical and cultural sites and their significance. Furthermore, this Section would require identification and assessment of such characteristics of the site under regulations of the National Park Service (36 CFR Part 60);

(c) add a new Section entitled "Cultural Resources Plan" in Part 780 (Surface mining permit application—minimum requirements for reclamation and operation plan) and in the companion underground mining regulations, Part 784;

(d) and insert additional language in the performance standards for surface and underground mining relating to protection of fish, wildlife, and related environmental values (Sections 816.97 and 817.97). This language would require that operators report archeological, historic or cultural materials discovered during mining to appropriate State officials. The majority of these comments cited section 515(b)(24) of the Act as possible authority for requiring the suggested degree of protection for cultural resources. Section 515(b)(24) provides that all surface coal mining and reclamation operations shall, "to the extent possible using the best technology currently available, minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practicable." The office acknowledges that this general statutory language could be said to authorize imposition of the suggested additional regulatory requirements. However, the legislative history which could support this reading of the statute is ambiguous.

Numerous commenters also suggested that additions and revisions similar to those discussed in the preceding paragraph *vis* protection for cultural resources be added to the regulations to provide a significantly greater degree of protection for visual and esthetic resources. The above discussion is equally applicable to this issue.

Because many of these comments suggested essentially new regulatory material which neither the Office nor the public have had an opportunity to adequately consider, they are not being adopted at this time.

§ 779.23 Maps, plans and cross-sections, preparation.

Section 779.23(a) of the proposed regulations was transferred to Section 779.25. Section 779.23(b) of the proposed regulations was transferred to Section 771.23(e).

§ 779.24 Maps: General requirements.

This section sets forth general requirements for maps which must be included in the permit application. The 12 subsections of Section 779.24 are summarized below and the statutory authority for each subsection is noted. These informational requirements are intended to provide the regulatory authority with easily accessible information on the potential impact of the mining operation on the resources and facilities in the area.

As proposed, Section 779.24 was prefaced with a statement that the maps required "be prepared in accordance with Section 779.23 . . ." Proposed Section 779.23(a) would have required that all maps, plans and cross sections included in a permit application "be prepared by or under the direction of, and certified by a qualified registered professional engineer or professional geologist, with assistance from experts in related fields such as land surveying and landscape architecture." (43 Fed. Reg. 41840). The Office received many comments on proposed Section 779.23(a) and its companion section in the underground mining permit application requirements, Section 783.23(a). Those comments which suggested that land surveyors, landscape architects, and soil scientists be given a larger role in the preparation of maps, plans and cross sections are discussed below. The reader is also referred to Sections 779.25 and 783.25 (Cross sections, maps and plans) and Sections 780.14 and 784.23 (Operation Plan: Maps and Plans) of the final regulations where the limitations on who must prepare and certify certain listed maps, plans and cross sections are contained. The preambles to those sections discuss and dispose of additional comments which are not discussed here.

Numerous commenters objected to proposed Section 779.23(a) as precluding land surveyors and other professionals from independently preparing the numerous maps, plans and cross sections which must be included in a permit application. Several commenters stated that, in many states, land surveyors have historically prepared many of the maps and plans required for mining permit applications. Some commenters stated that proposed Section 779.23(a) appeared to be in conflict with some existing state laws regarding, for example, preparation of boundary maps. Commenters suggested that the regulations be revised to permit land surveyors and other professionals to prepare permit application materials. Alternatively, some commenters suggested that the regulations allow the regulatory authority to set minimum qualifications of those who prepare maps, plans and cross sections.

Sections 507(b)(14), 515(b)(10)(B)(ii), 515(b)(13) and (f), 515(b)(22)(H), 515(c)(3)(B)(vii), 515(c)(4)(E) (incorporating 515(b)(22)(H) by reference), 515(d)(1), (incorporating 515(b)(22)(H) by reference), 515(e)(3)(B), 515(e)(4) (incorporating 515(b)(22)(H) by reference), and Section 515(b)(5) and (f) of the Act expressly require that certain maps, plans and cross sections be developed by or under the direction of professional engineers and in some cases geologists. These provisions of the Act are clear and unambiguous and, accordingly, the Office may not waive their requirements. Therefore, as to the types of maps, plans and cross sections listed in the above Sections of the Act, the Office has followed the exact language in the Act in adopting the regulations. (See, for example, Sections 779.25(e), 780.14(c), 783.25(e), and 784.11(c) of the regulations). The Office has no general authority to grant variances from the provisions of the Act. (*In Re Surface Mining Litigation*, 452 F. Supp. 327, 338, (D. D.C. 1978)). With respect to those provisions of the regulations which require technical materials which the Act does not specifically require that an engineer or geologist be responsible for preparing, the Office has determined, based on the public comments received, that land surveyors and other qualified professionals may prepare those types of technical materials. Thus, these professionals may prepare any of the technical materials listed in Sections 779.24(a) through (k). Accordingly, the introductory sentence which referred to proposed Section 779.23(a) has been eliminated. The regulatory authority is free to set minimum requirements for the qualifications of those who will prepare the materials required by Section 779.24, but the Office did not

make such a requirement mandatory in the regulations.

Section 779.24(a) requires a map showing the boundaries of lands and the names of the present owners of record (surface and subsurface) included in or contiguous to the permit area. Authority is Section 507(b)(1), (2) and (13) of the Act. As originally proposed, this Section would have required this information with respect to the mine plan and adjacent area. The change was made because the information is only needed for the area to be mined within the term of the permit applied for and for areas adjacent to the permit area which will be most directly affected by mining operations. Some commenters suggested that "subsurface" areas be deleted and that Section 779.24(a) should be restricted to coal to be mined rather than include map information on all minerals. These suggested changes were not made. As presently drafted, Section 779.24(a) is in accordance with the express requirements of the Act.

Section 779.24(b) requires identification of the boundaries of land within the proposed permit area upon which the applicant has the legal right to enter and begin mining activities. Statutory authority for this is Section 507(b)(9) of the Act. As proposed, this Section would have required this information with respect to the mine plan area. The change to permit area has been made because the applicant may not and need not have the legal right to mine the entire mine plan area at the time of the initial permit application. A map showing the areas that the applicant can legally mine is needed to determine the maximum extent of the proposed operation.

Section 779.24(c) requires identification of all areas proposed to be affected over the estimated life of the proposed activities together with a description of the size, sequence and timing of mining of subareas for which it is anticipated that additional permits will be sought. Authority for this Section is found in Sections 507(b)(8) and 508(a)(1) of the Act. The total impact of the operation on the environment cannot be assessed without knowing the total area to be mined, when and where it is to be done, and any additional areas expected to be mined. Some commenters suggested that Section 779.24(c) be deleted in its entirety. These comments were rejected because this information is clearly required by the Act and it is appropriate to depict such information on maps.

Section 779.24(d) requires identification of buildings on and within 1,000 feet of the proposed permit area together with identification of the current use of such buildings. Authority for this Section is Sections 507(b)(13) and 522(e) of the Act. As proposed, this Section would have required such information for all buildings on and within 1,000 feet of the proposed mine plan area. The geographical scope was narrowed to cover only those buildings on or near land to be mined during the term of the proposed permit. The existence and use of buildings in the larger mine plan area will be made known as mining progresses so that information on those outside the immediate permit area would have limited value.

Section 779.24(e) requires identification of surface and subsurface man made features within or passing through or over the proposed permit area. Authority for this is Sections 507(b)(13), 508(a)(2) and 515(b)(2) of the Act. The potential for disruption of pipelines, utilities and other facilities must be established to prevent adverse effects in the surrounding community and to assess the need for relocation or rebuilding of these facilities. Several commenters suggested that this section be revised to require identification of only known facilities. In response to these comments, the Office has revised this section to state that man-made features be identified. All features constructed by humans are presumed known. As originally proposed, this section would have required information on facilities within or passing through or over the mine plan area. This was changed to permit area because the type of information required here is not related to hydrologic balance, fish and wildlife, blasting or other areas where a broader scope of information is required to assess long-term and far reaching effects.

Section 779.24(f) requires identification and location on maps of the boundaries for reference areas for determining the success of revegetation. Statutory authority for this section is Sections 507(b)(13), 508(a)(2) and 515(b)(9) of the Act. Areas selected as the standard for reference for evaluation of revegetation success must be identified so that their suitability and representativeness can be assessed. Some commenters suggested that Section 779.24(f) should reflect that reference areas may not be required if the applicant conforms to the requirements of Section 816.116. If the applicant elects to use reclamation standards in Section 816.116 rather than reference area standards, no reference areas will be established and their mapping will be unnecessary. Therefore, no change in the language of this section is necessary.

Section 779.24(g) requires identifying the location of water supply intakes for current users of surface water flowing into, out of, and within a hydrologic area defined by the regulatory authority, and identifying those surface waters which will receive discharges from the affected areas in the proposed mine plan area. Authority for this section is Sections 507(b)(11) and (13), 508(a)(13) and 515(b)(10) of the Act. Surface water flow and users in the affected area need to be established to assess and mitigate the effects of mining on the hydrologic balance in that area. Several commenters objected to Section 779.24(g). Some suggested that it be deleted entirely because of the difficulty of obtaining the information. Other commenters suggested that a distance limitation be added. Some commenters stated that "water intake" was ambiguous. The Office intends water intake to mean a water supply intake; the necessary clarifying language has been made in Section 779.24(g). Establishment of boundaries for data collection is related to the hydrologic and topographic characteristics of each area and must be done on a case by case basis. Therefore, responsibility for delineating a "hydrologic area" has been given to the regulatory authority in Section 779.24(g), which has been revised to reflect this change. This "hydrologic area" is that referred to more specifically in Sections 779.13 and 779.16 of the regulations.

Section 779.24(h) requires identification of all public roads located in or within 100 feet of the proposed permit area. Authority for this section is Sections 507(b)(13) and 522(e)(4) of the Act. This information is necessary to prevent or minimize disruption of traffic flows, hazards to travelers, and provide the restoration of traffic flow and access after mining. In response to several comments, this section was changed from highway and roads to public roads to be more in accord with the Act.

Section 779.24(i) requires identifying the boundaries of all public parks and locations of any cultural or historic resources listed on or eligible for listing in the National Register of Historic Places and known archeological sites within the mine plan and adjacent areas. Authority for this section is found in Sections 507(b)(13), (508)(a)(10) and (14), and 522(e) of the Act. The area affected may include sites of recreation, scientific or social significance that must be evaluated to determine how they should be protected, whether mining may occur, how the mining should proceed around the site, and reclamation procedures needed to maintain the values associated with these sites. Information of this nature for the mine plan and adjacent area is necessary since mining operations may have adverse effects on parks, cultural and historical resources and archeological sites located

outside the confines of the proposed permit area.

As originally proposed, this Section would have required identification of all existing parks, archeological, paleontological, cultural, historical and unique geological features and known features in adjacent areas. Several commenters suggested that the term "significant" be added to modify "archeological, paleontological, cultural, historical, and unique" so that there would be a test for whether a feature should be included on a map. Several commenters suggested that only "known" and/or "significant" features be required to be identified. Other commenters suggested revising this section to require only the use of existing literature to identify and locate the features to be shown. The Office made the following changes in response to these comments: The determination of "significance" can be made by reference to the National Register of Historic Places since resources on or eligible for inclusion on the National Register have already been determined to be significant (See 36 CFR Part 60). As noted in the preamble to Section 761.12, a resource is eligible for inclusion if the Federal Register notice announcing its eligibility has been published by the Department of the Interior. The Office has revised Section 779.24(i) to require identification of "known" archeological sites as requested by the commenters. (Addition of the word "known" elsewhere in this section is unnecessary since resources on or eligible for inclusion on the National Register will already be known).

Section 779.24(i) has been revised to delete naturally occurring (non-manmade) paleontological and geological features. The Office believes that map identification of all such features (e.g., fossils) would be an unnecessarily burdensome task for the majority of operations in the East.

The Office has not added a requirement on the use of existing literature. The applicant's obligation to use literature and other sources is specified in Section 779.12(b) which requires that the narrative description of cultural and historic resources and known archeological features be based on "all available information including, but not limited to, data of State and local archeological, historical, and cultural preservation agencies."

Section 779.24(j) requires identification of each public or private cemetery or Indian burial ground located in or within 100 feet of the proposed permit area. Authority for this section is found in Section 507(b)(13), 508(a)(10) and (14), 515(b)(23) and 522(e)(5) of the Act. Indian burial grounds were added here by the Office as a result of public comments. Cemeteries and burial grounds must be identified in order to avoid them. This information is required with respect to the permit area since mining (which will be performed under a permit) may not occur within 100 feet of a cemetery.

Section 779.24(k) requires identification of areas that are established or are being considered for inclusion in the National System of Trails and the Wild and Scenic River System. Authority for this is Sections 507(b)(13) and 522(e) of the Act. These areas must be located to avoid irreparable damage to these resources. Information of this type for the mine plan and adjacent areas is necessary since mining operations may have adverse effects on these resources outside the permit area.

Section 779.24(l) allows the regulatory authority to require other relevant information. Authority for this Section 507(b)(13) and 508(a)(14) of the Act.

A few commenters suggested that specific requirements for identifying community facilities be included in Section 779.24. The Office believes that Section 779.24 as drafted will result in identification of such facilities. (See 779.24(d), (e), (g), (h), (i) and (j).) Therefore, no changes were made in response to this comment.

Some commenters suggested that Section 779.24 be revised to include land use and zoning maps and description of planning studies for the permit and surrounding areas. This information will be submitted under other sections of the regulations. (See, for example, Section 779.22(c) and 780.23.) Thus, no additional requirements were added to this map section.

§ 779.25 Cross sections, maps and plans.

Authority for this Section is Sections 102, 201, 501(b), 503, 504, 507(b)(11), (13), (14), and (17), 508(a) and 515(b) of the Act. Information required under this Section will provide the regulatory authority with complete information about the proposed mining site so that the applicant's ability to comply with the performance standards of these regulations can be fully evaluated.

As proposed, Section 779.25 was prefaced with a statement that the materials required under Section 779.25 "be prepared in accordance with CFR 779.23 . . ." Proposed Section 779.23(a) would have required that all maps, plans and cross sections required under Section 779.25 "be prepared by or under the direction of, and certified by a qualified registered professional engineer or professional geologist, with assistance from experts in related fields such as land surveying and landscape architecture." (43 Fed. Reg. 41840). Many comments were received on the issue of who may prepare and certify maps. (See the preamble to Section 779.24 where these comments are discussed and resolved.) As explained in that preamble, several sections of the Act expressly require that certain maps, plans and cross sections be developed by or the direction of professional engineers and in some cases geologists. As to those statutory requirements, the Office has closely followed the language of the Act in adopting these regulations. Accordingly, the reference in Section 779.25 to Section 779.23 has been deleted (as has Section 779.23 itself), and a new section has been added (Section 779.25(1)) which states that all plans and cross sections required under Section 779.25 must be prepared by or under the direction of and certified by a qualified registered professional engineer or professional geologist, with assistance from experts in related fields such as land surveying and landscape architecture. Section 779.25(1) is based on Section 507(b)(14) of the Act.

Other organizational and editorial, non-substantive changes have been made in Section 779.25. Two mapping requirements which appeared in the introduction to Section 779.25 have been moved to Sections 779.25(a) and (b), and the remaining subsections have been renumbered.

A few commenters stated that the title of this section as proposed ("Cross-sections maps and plans") was incorrect. The title now correctly reads "Cross sections, maps, and plans".

Several commenters questioned the need for annual updating of cross-sections, maps, and plans. The commenters argued that updating of these materials on an annual basis is costly, time consuming and unnecessary. The Office acknowledges these potential difficulties associated with resubmittal of updated revisions of these document. Accordingly, the Office has deleted the requirement for annual revision; updating is now required at the discretion of the regulatory authority (Section 779.25(1)).

Several commenters objected to the scope of information required in Section 779.25, stating that information should only be required for the permit area, or for the permit and adjacent areas. These comments are discussed below in connection with the descriptions of the individual subsections of 779.25 which have areal requirements.

Section 779.25(a) requires identification of elevations and locations of test borings and core samples. Section 779.25(b) requires information on the elevation and location of monitoring facilities which are used to gather data in preparation for the permit application. Some commenters suggested that "monitoring stations" was too specific and should be replaced with

"monitoring plan or program". The suggested change was not made since this section requires that monitoring stations be depicted on maps rather than merely described. Descriptions of monitoring plans and programs are required elsewhere in the regulations. (See, for example, Sections 780.15 and 780.16).

Section 779.25(c) requires detailed information on the coal seam, and on the stratum of overburden and stratum immediately below the lowest coal seam to be mined. This information is needed to establish the amount of material to be removed, the hydrologic effects of removing the seam, and the nature of the final pit floor. Some commenters suggested that information on nature, depth and thickness of coal seams be removed from public review as confidential information. The Office did not revise Section 779.25(c) as suggested. Confidentiality of permit application information is governed by Section 786.15 of these regulations. Other commenters suggested that Section 779.25(c) be revised to require additional information on the hydrology of the area immediately below the lowest coal seam to be mined. The Office made no changes because this information is already required under Sections 779.25(f) and 779.14 (narrative description) of the regulations.

Section 779.25(d) requires identification of all coal crop lines and the strike and dip of the coal to be mined within the proposed mine plan area. This information is necessary to estimate the probable extent of the operation and to assess the proposed mining method. As suggested by comments, the term "mineral crop lines" was revised to read "coal crop lines". As proposed this information would have been required for the proposed mine plan and adjacent areas. Some commenters stated that this information should be required for the permit area only. These comments were rejected. This information is needed for the mine plan area in order to assess the potential cumulative impacts of the proposed mining operations. However, "adjacent area" was deleted since the mining will only take place within the mine plan area.

Section 779.25(e) requires identification of the location and extent of known workings of active, inactive or abandoned underground mines. Maps locating underground workings will help to provide a basis for assessing the potential physical and environmental hazards of mining in their vicinity. Some commenters objected to this requirement on the basis that this information cannot always be determined. The Office believes no change is necessary since Section 779.25(e) is limited to "known" workings. The scope of the information required under 779.25(e) was not changed to permit area as suggested by comments. This broad information is necessary because water drainage from underground mines can be caused by surface mining, (see page BIII-58 of the Final Environmental Impact Statement and the preamble to Section 816.55) which in turn, affects the hydrology of the entire area. The Act expressly requires broad information with respect to hydrology. (Section 507(b)(11)).

Section 779.25(f) requires mapped information on the location and extent of subsurface water if encountered within the proposed mine plan and adjacent area. This information is necessary to establish the premining subsurface hydrologic regime, to determine the changes that mining would cause to the hydrologic balance, to help plan corrections for adverse impacts, and to set standards for postmining groundwater flows. Comments that the scope of this information be limited to the permit area where rejected for the reasons discussed under Section 779.25(e).

Sections 779.25(h) and 779.25(i) require mapped information on previous surface mining activities. This information is necessary to establish what areas were disturbed by previous operations, to assess the present environmental damage of the previous operations, and to establish reclamation criteria based on the natural condition of the land, not the present disturbed condition. Environmental control facilities would be identified under paragraph (i) to anticipate, minimize and avoid interruption of their operation. Information under Section 779.25(h) is necessary for the mine plan area in order to assess the cumulative impacts in the area of the mining operations. Information under Section 779.25(i) is required with respect to the permit area only because the effects of the proposed operation on these areas need not be assessed until just before mining commences.

Section 779.25(j) requires identification of gas and oil wells within the proposed permit area and water wells within the mine plan and adjacent area. Knowledge of these facilities will enable the applicant to anticipate and avoid or minimise interruption of their operation. The terms "depth if available" have been added as a result of comments which stated that depth information is often difficult to obtain. Information on water wells is not limited to those within the permit area because such wells are related to the hydrology of the area and the Act requires broad information with regard to hydrology. (Section 507(b)(11)).

Section 779.24(k) requires mapped information on slope measurements measured and recorded according to certain criteria specified in Sections 779.24(k)(1), (2) and (3). This section has been revised to require existing land surface configuration measurements for the permit area since this information is needed only as applications for individual permits are filed. As proposed this section would have required a specific contour interval. (See proposed Section 779.25(1)(5), 43 Fed. Reg. 41841, September 18, 1978). This requirement has been deleted on the basis of many comments which stated that five-foot contour maps are generally unavailable and their preparation is very costly. Proposed Section 779.25(1)(4) has also been deleted. This section would have permitted (but not required) that slope measurements could be made from existing topographic maps. The Office believes this section is unnecessary because slope measurements may also be made in other ways, e.g., measurements in the field.

§ 779.27 Prime farmland identification for surface mines.

Statutory authority for this Section is found in Sections 102, 201, 501, 507, 508; 510, 515 and 701 of the Act. Section 779.27 is a new section which has been transferred from Sections 785.17(c) and 785.17(d) of the proposed rules. This transfer has been made because the prime farmland identification procedures must be followed for all surface mining activities in order to determine which lands are covered by the more strigent requirements for prime farmland. Part 779 covers general requirements for all surface mining permit applications, while Part 785 applies to the limited special conditions and operations discussed therein.

Section 507(b)(16) of the Act requires a reconnaissance survey to determine whether a permit application should contain a soil survey. With respect to prime farmland, Section 779.27 implements this requirement. The particular items of information which are required to be addressed in the pre-application investigation are designed to enable the regulatory authority to determine, under Subsections 779.27(b)-(c), that either (1) no soil survey is needed because the lands in the mine plan area are clearly not prime farmland and are, therefore, entitled to a negative determination; or (2) a soil survey is needed under paragraph (d) because the results of the reconnaissance inspection do not clearly exclude the mine plan area from the prime farmland category. Based on the results of the survey, the regulatory authority will decide whether the mine plan area definitely contains prime farmland, which would require that the applicant file a plan for restoration of the lands and other appropriate application material under Section

510(d)(1) of the Act and 30 CFR 785.17.

Section 779.27 requires that the preapplication investigation be conducted for the entire mine plan area, because Section 508(a)(1) of the Act requires permit applications to contain identification of the lands subject to surface mining activities over the full life of those activities. The Office believes that knowledge of the extent of prime farmlands throughout the mine plan area is needed for the regulatory authority to make adequate permit decisions with respect to the hydrologic impacts of surface mining activities within the first permit area on the remainder of the mine plan area, so that those activities do not adversely affect prime farmland in the remainder of the mine plan area. It should be noted, however, that the soil reconstruction plan filed with a permit application need only cover the permit area to be mined and reclaimed within the term of the permit involved. See also 30 CFR 785.17(d) and Part 823.

Section 779.27(b) establishes criteria for making negative determinations of prime farmland for the mine plan area. These criteria are indicators that can be used without the applicant conducting a detailed soil survey for the lands involved. Section 779.27(b)(1) provides for excluding land that has not been historically used for cropland, because such use is a necessary element of prime farmland as defined in Section 701 of the Act and 30 CFR 701.5. The phrase "historically used for cropland" is also defined in Section 701.5.

Section 779.27(b)(2) excludes lands with a slope of 10 percent or greater. "Slope" is also defined in Section 701.5. The basis and purpose for this provision was explained at 43 Fed. Reg. 41717-41718 (Sept. 18, 1978). Slope measurements are to be provided under Section 779.25(k). The Office received a range of comments on this standard, with some requesting that the criterion be lowered to exclude all lands of slopes less than 7 percent; while others suggested that, in their experience, lands have been farmed with agricultural yields at slopes of up to 14 percent. Based upon this range of experience, the Office decided not to change the regulations. As was indicated in the preamble to the proposed rules, the 10 percent slope requirement was derived by extrapolating the erodibility factor in the technical prime farmland criteria of the Soil Conservation Service (SCS) which, when judged in the light of SCS' experience, revealed that lands with slopes over 10 percent are too eroded to retain sufficient water. It should be noted that it is this element of SCS' criteria that was used as the basis for the 10 percent figure, not, as some commenters assumed, a standard soil classification grouping by slopes of intervals 0-6 percent and 6-12 percent. Moreover, those comments ignore the experience of other commenters that high-quality agricultural lands may indeed exist on land over moderate (e.g., 6-14 percent) slopes. If, indeed, a State has substantial quantities of land with slopes over 10 percent that need prime farmland protection, it is expected that special precautions may be included in the regulatory authority program for that State under Sections 731.13 or 736.22(a)(3).

Section 779.27(b)(3) establishes negative determination criteria with respect to the water availability for lands within the mine plan area. The basis and purpose of these criteria was explained in 43 *Fed. Reg.* 41 718 (Sept. 18, 1978). Some comments were received objecting that this provision was unnecessary, because water availability for lands is adequately addressed by consideration of soil surveys. These comments have not been accepted because the purpose of Section 779.27(b) is to allow for negative determinations to be made without the applicant having to conduct a full survey.

One commenter objected to Section 779.27(b)(3), asserting that it was inappropriate to allow for exclusion of lands from prime farmland categorization merely because lands do not receive 14 inches or more precipitation per year. This commenter cited data tending to show that, in the Northern Great Plains, agricultural productivity depended on soil types and did not correlate with precipitation. The Office agrees with the commenter's views for this unique area but does not believe that a change to the regulation is necessary because, in addition to the exclusion of less than 14 inches of precipitation, Section 779.27(b)(3) also requires that lands not be irrigated, naturally subirrigated, or have a developed water supply. Thus, in arid areas such as the Northern Great Plains, lands cannot be excluded under Section 779.27(b)(3) merely on the basis of precipitation data.

Section 779.27(b)(4) provides negative determination criteria relating to readily determinable surface soil characteristics and flooding frequencies. The basis and purpose for this Section was provided in 43 *Fed. Reg.* 41718 (Sept. 18, 1978). Several comments asserted that these criteria should be deleted in the final rules because they are addressed in soil surveys. They have not been rejected because the purpose of Section 779.27 is to make prime farmland determinations without resorting to full soil surveys. Another comment suggesting that these criteria be expressly specified in their relationship to preclusion or reduction of land value for cultivating crops has also been rejected because the relationship of the land to its actual use for cultivation is adequately addressed in negative determinations under Section 779.27(b)(1).

A number of comments were received on the use of the frequency of flooding concept in the proposed rule as a negative determination criteria. These comments generally objected that the proposed rule would allow exemption of too much high quality agricultural land located in flood plain areas which are frequently flooded. The Office accepted the general thrust of these comments and has adopted a final rule with a two-step flooding test to insure that lands subject to flooding are not excluded from prime farmland protection, unless flooding occurs over a long period of time to decrease crop yields. However, the Office has decided not to define flood specifically or to relate the flooding criterion to specific growing seasons, because there are matters of highly local variability which are more appropriately addressed in particular State regulatory program provisions.

Commenters' requests that the term "very rocky surface" be defined in Section 779.27(b)(4) have not been accepted because this condition [too] can also be [matter] of substantial local variability. The Office recognizes that, in general, coverage of more than 10 percent of the area with coarse rock fragments is sufficient to preclude economical planting, cultivating and harvesting. However, there may be areas where other factors exist that make use of the land for farming highly desirable with rocky levels over 10 percent.

Section 779.27(b)(5) provides the final negative determination criteria for prime farmland which is a designation by the SCS on the basis of an existing, adequate soil survey for the mine plan area. It is to be used pursuant to the requirements of Sections 779.27(c)-(d).

Numerous commenters suggested that negative determination be made on the basis of predetermined sizes of land to reflect their opinion that small plots of prime farmland lack economic farming viability. Suggested alternatives included (1) exclusion of plots of 5-10 acres, (2) allowing consolidation of small plots into one large plot, (3) exclusion of plots so small that they are not viable economic units, and (4) allowing the regulatory authority discretion to identify, with the assistance of agricultural agencies, those small tracts of prime farmland which must be reconstructed.

The Office has not accepted these suggestions for several reasons. First, the commenters provided no data or other material establishing how ade-

quate evaluation of economic viability of prime farmland could be made with the relatively low level of detail required in a preappplication reconnaissance investigation. Second, to the extend that the economic utility of lands can be reviewed in pre-application investigation, this factor is taken into account under Section 779.27(b)(1) by careful scrutiny of whether the land has some history of agricultural use. Finally, the Office does not believe that Congress intended to limit prime farmland protection to only large plots or to utilize a purely economic test for protection of prime farmland, since the focus of the definition of prime farmland is on historical use of the land, not on whether it is used in marketable use at a particular time. Thus, the final regulations do not contain any exclusion for small plots of prime farmland.

Two commenters suggested that this entire section be deleted because there is no basis for it in the Act and the SCS can easily determine whether or not prime farmland is in the permit area. The preapplication negative determination requirement provides the mine operator with a simplified method of disposing of the prime farmland issue, especially where there are obviously no prime farmlands. This provision will undoubtedly assist the small operator in Appalachia. It is true that the SCS can easily determine the location of prime farmland soils where soil surveys have been prepared. However, where soil surveys have not been prepared, prime farmland soil surveys would otherwise be required to determined if prime farmland soil exists on the mine permit area. To avoid requiring preparation of a soil survey in obviously nonprime farmland areas, negative determination is a lower cost alternative which would be an alternative in the permit applications. For these reasons, these comments are rejected.

A few commenters endorsed the negative determination provision, however, they did not believe that a formal application was necessary. These comments have been rejected because the negative determination must be made with adequate provision for public participation under Part 786, which cannot be accomplished without use of a permit application to establish that the criteria of Section 510(d) of the Act will be achieved.

PART 780—SURFACE MINING PERMIT APPLICATION—MINIMUM REQUIREMENTS FOR RECLAMATION AND OPERATION PLAN

Introduction

1. Part 780 establishes the heart of the permit application: The mining operations and reclamation plan for surface mining activities. The regulatory authority will utilize this information, together with the description of the existing environmental resources obtained under Part 779 to predict whether the lands to be mined can be reclaimed as required by the Act, and if the operations can be conducted in compliance with the standards of Part 816, Subchapter K. Authority, purposes, and bases were discussed in general, at 41700–41705 (September 18, 1978).

2. As is discussed in greater detail in the introduction to the preamble to Part 779, substantial changes were made in Part 780 to narrow the scope of detailed information required in application concerning the mine plan and adjacent area. However, the Office did not accept comments asserting that all requirements of part 780 be limited to the proposed permit area. For further explanation of this issue, see the preamble to Section 701.5 and to the individual Sections of Part 780.

3. The scope, objectives, and responsibilities specified in the final rules for Part 780 are the same as in the proposed rule, with one major exception. The first phrase in proposed Section 780.2 was deleted as redundant of the statement of the scope of Part 780 in Section 780.1. In addition, minor editorial revisions were made to Sections 780.1–780.4, to clarify meaning.

4. A commenter's suggestion that Part 780 be deleted entirely as unnecessary, in view of the detailed nature of the statute itself (Sections 507(b), 508(a) of the Act) was rejected. Congress clearly intended that the Office would amplify the requirements of the Act in implementing regulations, to establish minimum standards for the permanent regulation program. (See Sections 201(c), 501(b), 503(a), of the Act).

Another commenter's objection to use of the term "comprehensive" in the statement of objectives at section 780.2 was also rejected. Congress contemplated that operations and reclamation plans would be a full and detailed statement of all relevant information. (Sections 508(a), of the Act. H.R. Rept. No. 95–218, 95th Cong., 1st. Sess at 71–93. (1977))

§ 780.11 Operation plan: General requirement.

1. The statutory authority for Section 780.11 is found in Sections 102, 501(b), 503, 507(b), 508(a), 510(b) and 515(b) of the Act. This section requires that each application contain a description of proposed mining operations to be conducted within proposed mine plan area. This information is necessary to enable the regulatory authority to gauge the cumulative impacts of the proposed operations on, for example, the hydrology and fish and wildlife of that area. Section 780.11(a) requires a narrative description of the mining methods, engineering techniques, and major equipment planned for use in the operation, and a description of the anticipated production of the mine. Section 780.11(b) requires a narrative description of the planned use of certain listed facilities, including construction, modification, maintenance and removal of such facilities. The information required by this section is intended to aid the regulatory authority in determining whether the applicant can meet the performance standards of these regulations.

In addition to the changes made in this Section in connection with consideration of public comments, the Office has made editorial non-substantive changes in this Section since it was proposed.

2. Numerous commenters objected to the requirement in Section 780.11(a) for tonnage information. Some suggested that tonnage information be included only for small operator assistance programs; others suggested that tonnage information is confidential and as such should not be required. The Office considered the following alternatives in connection with these comments: (1) no change; (2) delete the requirement for tonnage information; and (3) revise Section 780.11(a) to require tonnage information only from operators participating in the small operator assistance program. The Office believes that figures on anticipated coal production are necessary to determine the feasibility of an applicant's plan to comply with the performance standards. For example, tonnage reports will assist the regulatory authority in evaluating the suitability and accuracy of proposed plans for waste storage, spoil disposal, and road locations and size and in determining the cumulative effects of the proposed mining operation. Therefore, no changes were made as a result of these comments.

3. Several commenters suggested that descriptions of major equipment (Section 780.11(a)) be limited to equipment used in mining and reclamation. The terms "those operations" which appear in Section 780.11(a) are intended to refer back to the terms "mining operations" which appear in the introductory paragraph to this Section. The Office believes that no additional changes or limitations are necessary, and thus has made no revisions as a result of these comments.

4. A few commenters objected to Section 780.11(b) in its entirety. Others suggested that Sections 780.11(b)(1) and 780.11(b)(2) be deleted as unnecessary. The information

required under Section 780.11(b) is necessary to insure compliance with the performance standards as follows: Paragraph (b)(1), Section 816.45–46, 48, 91–93; Paragraph (b)(2), Section 816.21–25, 71–74, 100–106; Paragraph (b)(3), Section 816.59, 150–176, 180; Paragraph (b)(4), Section 816.81–89, 91–93; Paragraph (b)(5), Section 816.181; and Paragraph (b)(6), Section 816.41–47, 96. Proposed Sections 780.11(b)(1) and (b)(2), major buildings and other facilities, and utilities services, respectively, have been deleted as suggested by comments. These changes have resulted in Section 780.11(b) being renumbered in the final regulations.

5. Several commenters suggested that proposed Section 780.11(b) implied that all of the listed facilities and structures be removed following mining. As pointed out by these comments, removal is not required in all cases. Accordingly, language has been added in Section 780.11(b) to clarify that removal of facilities need not be described if those facilities are being retained as part of the proposed post-mining land-use.

6. Some commenters suggested that a new requirement be added here as well as in the companion Section of the application requirements for underground mining operations that would require an operator to disturb only that amount of land necessary for the conduct of the mining and reclamation operations. These commenters cited Section 102(d) of the Act as support for their position. Section 102(d) of the Act states the general purpose that surface coal mining operations be conducted so as to protect the environment. All of Subchapter K (Permanent Program Performance Standards) is intended to implement this and the other stated purposes of the Act. (See Sections 810.2 and 816.71(a), for example.) To the extent that the Act requires information in the permit application regarding minimum disturbance of land, that information is to be submitted pursuant to Section 508(a)(6) of the Act and Section 780.18(b)(6) of these regulations. The Office believes it is without authority under Section 508 of the Act to require an entire plan directed toward minimum disturbance of land areas when this result is achieved under other regulations. Accordingly, no change has been made as a result to these comments.

§ 780.12 Operation plan: Existing structures.

This is a new section in the final regulations which sets forth the operation plan requirements in permit applications for surface coal mining activities. The authority for this Section and its basis and purpose are discussed in the preamble to 30 C.F.R. 701.11(e). This section was added in response to comments suggesting that the Office adopt an explicit rule for regulation of existing structures.

§ 780.13 Operations plan: Blasting.

1. Authority for this Section is Sections 102, 201(c), 503, 504, 506, 507(g), 508(a) and 515(b) of the Act. This Section provides the regulatory authority with a narrative explanation and data for evaluation of the possible environmental and public health and safety consequences of the use of blasting agents during the proposed surface mining activities. This evaluation will be used to determine whether the activities can generally be expected to comply with Sections 816.41, 816.50-816.51, and Sections 816.61-816.68 of Subchapter K. This Section was renumbered from Section 780.12 of the proposed regulations. Technical literature considered in its development was the same as for Sections 816.61-816.68.

2. Proposed Section 780.12 would have required a blasting plan for the affected area, which could have been construed to call for a plan for the entire life of the proposed surface mining activities (e.g. for the "mine plan area"), given the way in which the terms affected area, permit area, and mine plan area have been defined. In response to comments which objected generally to requiring the application to cover areas outside the immediate permit area, the Office has specified that the blasting plan need only be provided for the proposed permit area in the final rules. These comments, as discussed below, indicated difficulty would exist in providing detailed information on blasting operations at the permit application stage. thus, the Office will not require applicants to provide highly detailed data on blasting to be conducted many years in the future (i.e., beyond the first permit term increment), as would have been required under proposed Section 780.12.

3. One commenter found no problem in meeting the proposed requirements. It is true that, in some operations, information such as drillhole patterns, hole loading, and firing orders can be developed before mining operations are started. Where the geologic formations are constant and the mining operations will be relatively short-lived, providing detailed information for the blasting plan for the entire permit area would not be difficult for the applicant. However, as pointed out by other commenters, many mining operations have varying conditions which require frequent adjustments of drilling patterns, charge weights, and detonation sequences during mining operations.

These conditions could be partially accounted for by only requiring that approximate drilling patterns be submitted with the application. However, this would still result in the frequent need to revise the permit application when conditions require drilling patterns different from those anticipated in the original application.

Therefore, the Office has modified the final rule at Section 780.13(b), to delete the requirement for detailed blasting operational data in the application itself. Instead, the applicant will be required to submit its plans to the regulatory authority for recording and reporting detailed blasting operational data during the actual conduct of mining operations.

The final rule will still provide the regulatory authority, through Section 780.13(a), with sufficient information to determine that the applicant will comply with the provisions of Sections 816.61–816.68, of Subchapter K. This also meets the requirements of Section 507(g) of the Act. To the extent that Sections 816.61–816.68, require prior regulatory authority approval of blasting, it is expected that detailed information of the kind originally contemplated for inclusion in the permit application will have to be supplied to the regulatory authority under sections 816.62 and 816.65 after the permit issuance, but before particular blasting operations are conducted. See the preamble to Section 816.65.

4. Commenters to the proposed rule noted an inconsistency between proposed Sections 780.12(b) and Section 816.68. The former would have required that a record of every blast be reported to the regulatory authority, while the latter required that records merely be retained at the permit area for public and regulatory authority-inspection. This inconsistency was eliminated by appropriate modification to Section 780.13(b) in the final rule. Records ordinarily need only be retained on-site.

5. Some editorial changes were made to subparagraphs (b) (1)–(2) of the final rule to eliminate redundant language. The "configuration" requirement of (b)(1) and "placement" specification of (b)(2) were both eliminated as redundant of the phrase "drilling patterns, including size, numbers, depths, and spacing of holes," which was retained in the final rules at 780.13(b)(1).

6. The review of the regulations prompted by comments on other sections revealed an inconsistency in the regulations, because Section 816.65(b) requires regulatory authority approval of blasting under emergency conditions. Section 816.65(b) of Subchapter K states, ". . . except in those unavoidably hazardous conditions approved by the regulatory authori-

ty, . . ." but no provision existed in the proposed regulations for the operator to submit, for regulatory authority approval, identification of emergency situations under which these deviations would be allowed. The logical place for such a description to be submitted is with the permit application. The types of emergency conditions involved are those for which weather information and other similar historical or physical data can be supplied by the applicant, as opposed to drill patterns and precise figures on charge weights which cannot necessarily be determined until operations are about to commence in the field. Section 780.13(f) has, therefore, been added to the final rules.

§ 780.14 Operation plan: Maps and plans.

Authority for this Section is found in Sections 102, 201(b), 501(b), 503, 504, 507(b) and (g), 508(a) and 515 of the Act. In addition to the narrative plans required by other sections, this section of part 780 (presented in the proposed regulations as Section 780.13) requires that each application include certain described maps and plans. Some of these maps and plans must be prepared by specified professionals as required under Sections 507 and 515 of the Act. Accurate maps and plans are needed by the regulatory authority to determine whether the applicant can meet the performance standards of Part 816.

The Office has made several editorial and organizational changes in this section to make it consistent with other closely related sections and to clarify its provisions. The introduction has been reduced to a single sentence prefacing the three paragraphs of this section. Section 780.14(a) now includes material originally presented in the introduction and paragraphs (a) and (b). Reference to map scale has been moved to Section 771.23(e) and comments received thereon are discussed in the preamble to that Section. Section 780.14(b) now contains eleven paragraphs most of which were originally listed under paragraph (c).

Three paragraphs were deleted from Section 780.14(b). Maps for final surface configuration and location of water, air and wildlife monitoring points are now covered in Sections 780.14 and 779.25(b), respectively. The locations and descriptions of facilities which will remain permanently after reclamation are covered in the narrative statement required under Section 780.11(b). Other changes were made as a result of comments and are discussed below.

Section 780.14(a) requires information on the lands, facilities and features of the proposed mine plan and adjacent areas which will be affected or changed by the proposed operation. This information will give the regulatory authority an overview of the entire operation which will supplement the information on plans for the proposed permit area required under Section 780.14(b). Information on the proposed mine plan and adjacent areas is necessary in order to assess the cumulative impacts of the entire mining operation. Section 780.14(b) requires identification of structures, facilities and areas which will be used or affected by the mining operation. This information is required for the proposed permit area except that identification of the land area to be affected according to the sequence of mining and reclamation must be made with respect to the proposed mine plan area. Section 780.14(c) requires that maps identifying certain areas and facilities be prepared by or under the direction of and certified by a qualified registered professional engineer or professional geologist, with assistance from experts in related fields such as land surveying and landscape architecture. However, Section 780.14(c) further requires that plans for sedimentation ponds be prepared only by qualified registered engineers, and that plans for spoil disposal facilities be prepared only by qualified registered professional engineers. These requirements are in accordance with Section 515 of the Act. The purpose of Section 780.14(c) is to insure high quality planning, design and documentation of maps required in the application.

Some commenters suggested that Section 780.14(a) be revised to limit the scope of the map information required to the proposed permit area for the first five years of operation. As proposed, this Section would have required maps for the proposed permit area but without a specified time period. Section 508(a)(1) of the Act, upon which Section 780.14(a) of the regulation is based, clearly states that the application must identify "the lands subject to surface coal mining operations *over the estimated life of those operations . . .*" (emphasis added). Maps of the total mine plan area will be required to give a complete picture of the entire mining operation and to assess its cumulative effects. As a result, these comments were not adopted and Section 780.14(a) was revised to require maps and plans for the proposed mine plan and adjacent areas.

These commenters also suggested that the information required under Section 780.14(b) be limited to the proposed permit area. These comments were adopted and revisions made to Section 780.14(b) with one exception. As required by Section 508(a)(1) of the Act, the identification of areas to be affected under Section 780.14(b)(2) must be given with respect to the proposed mine plan area.

Some commenters suggested that Section 780.14(b)(9) relating to identification of facilities used to protect or enhance fish and wildlife and related environmental values was ambiguous and should be deleted. "Facility" as used in this section is intended to refer to structures such as fences, under passes and overpasses, and habitat components such as vegetation groupings and planned wetlands which are designed to mitigate the effects of mining and, where possible, enhance valuable fish, wildlife and other environmental values. This information is necessary to insure compliance with Section 816.97 and is an important aspect of postmining land use planning. No change was made as a result of these comments.

A few comments suggested that the reference to design and construction specifications in section 780.14(b)(11) be deleted. The Office agrees that specifications are inappropriate for inclusion as part of a map. (See Section 780.25 for requirements for construction of the facilities listed in Section 780.14(b)(11)). Accordingly, the reference to specifications has been deleted.

Some commenters suggested that the final surface configuration map which was proposed to be required under this section (see Section 780.13(c)(11) of the proposed regulations) not be required in all cases. As discussed above in this preamble, this requirement has been moved in the final regulations to Section 780.18(b)(3). As a result of this comment and other comments discussed in the preamble to section 780.18, either contour maps or cross sections of the proposed final surface configuration may be provided in the permit application.

A few commenters suggested that Section 780.14 be revised to include an additional requirement relating to identification of reference areas on maps. Since this information is required under Section 779.24(f), a duplicative requirement was not added to Section 780.14(c). A number of commenters suggested that Section 780.14(c) be revised to state that registered professional engineers as well as professional geologists be permitted to prepare, supervise the preparation of, and certify the maps listed there. The Office agrees that this language would be more in accordance with the Act, and, accordingly, has made this change. Except for the limitations set forth in Sections 780.14(c) (1) and (2), any qualified professional may prepare the maps required under this section. The reader may wish to refer to the preamble to Section 779.24 for additional discussion of comments relat-

ing to who may prepare maps, plans and cross sections.

§ 780.15 Air pollution control plan.

Section 780.15 establishes the permit application requirements, so that the regulatory authority is provided with comprehensive and reliable information on the air-quality impact of proposed surface coal mining operations. This section is intended to assure that proposed surface coal mining operations comply with the air quality requirements of the Act.

1. The Office considered the following general alternatives to the final regulations: (a) exempt fugitive dust from regulation under the Act; (b) require monitoring and management practices in all cases, and modeling as a condition precedent to obtaining a permit for Western surface mines with production levels in excess of one million tons per year; (c) require monitoring in some cases, together with dust-control practices in all cases and an air-quality review in some cases. The rationale for selecting the final regulations in lieu of the alternatives is found in the context of this general preamble discussion, the disposition of submitted comments related to the final regulations, and the preamble to the proposed regulations for the permanent program (See 43 *Fed. Reg.* 41700–41703).

2. Permit application regulations for air quality are supported by Sections 102, 201(c), 501(b), 503 (a), and (b), 504, 507(b), 508(a)(9), 510, 515(b)(4) and (b)(24), and 517 of the Act. In addition to technical literature submitted in comments and relied upon in this preamble, the Office relies upon technical literature, State laws, and regulations and other materials listed in the preamble to the proposed regulations (42 Fed. Rec. 41700–41703, 41770–41771, September 18, 1978.)

3. In the Act, Congress established an explicit performance standard to control air pollution from surface mining operations. Section 515(b)(4) of the Act provides that all operators shall "stabilize and protect all surface areas including spoil piles affected by the surface coal mining and reclamation operation to effectively control erosion and attendant air and water pollution." (Emphasis added.)

Thus, if a surface area is affected by surface coal mining and reclamation operations, the Act requires effective control of attendant air pollution. The phrase "surface coal mining and reclamation operations" is broadly defined in the Act to mean surface coal mining operations and all operations necessary and incident to reclamation. (Section 701(27).) The definition of the phrase "surface coal mining operations" includes not only activities conducted on the surface of lands in connection with surface mines, and surface impacts incident to underground mines, but also haul roads and access roads for such activities. Therefore, the performance standard of the Act mandates pervasive control of air pollution from surface coal mining and reclamation operations.

Congress has required that each permit application contain the measures to be taken to implement this performance standard. The permit application requirements listed in Sections 780.15(a) and (b) are the first critical steps in the process of assuring that all surface coal mining operations effectively control air pollution from all surface areas. The surface mining permit cannot be approved unless the regulatory authority finds, in writing, that the permit application meets requirements to effectively control air pollution from all surface areas. (Sections 510(b) and 508(a)(9), (14).

4. The final regulations are structured on a regional and projected production level basis. This regulatory scheme has been decided upon, in part, because of the current status of technical literature and air quality regulations in the field. The regulations also recognize the potential variations in air quality impact depending upon climate, geology, and operating characteristics of surface coal mining operations in different parts of the country.

The final permit regulations addressing air quality are separated into two parts. For surface mining activities west of the 100th meridian west longitude with projected production rates exceeding one million tons of coal per year, the application must contain an air-quality monitoring program and a fugitive-dust control plan. For all other surface mining activities in the United States, a fugitive-dust control plan is required, but a monitoring program is at the discretion of the regulatory authority.

5. Extensive public comments were received on the proposed air quality permit requirements. Some commenters suggested that the Office's proposed regulations were inconsistent with EPA's regulatory program. A few of the same commenters said the Office proposed to duplicate what EPA is doing to control fugitive dust. Acccording to these commenters, such inconsistency and duplication warranted withdrawing the regulations. In response to these comments, environmental groups pointed out that the Office's proposed regulations could not duplicate and be inconsistent with EPA regulations at the same time.

The final regulations have been modified to complement and be consistent with EPA's regulatory program. A number of meetings and discussions have been held with EPA to assure that the Office's regulations would not conflict with EPA's air quality control program. The final regulations, concurred in by EPA, follow the regulatory scheme outlined by EPA in a meeting on October 23, 1978. The Office intends to continue to work closely with EPA to assure that implementation of the regulations does not conflict with EPA's air quality control program.

6. Several commenters suggested that the Office's proposed regulations exceeded the authority of the Act. Some commenters suggested that the Office was without authority to require fugitive dust controls in excess of EPA requirements. Another group of commenters said the Office clearly had legal authority to enact air quality regulations beyond EPA regulations.

The Office believes that both the Act and the apposite case law amply support the final regulations. As stated previously, Section 515(b) of the Act contains an explicit performance standard mandating effective control of attendent air pollution from all surface areas. The Act requires the permit application to include the steps to be taken to comply with this performance standard. Sections 507, 508, and 510 of the Act.

Any doubt regarding the Office's legal authority to regulate air pollution beyond EPA's regulatory program has been removed by the District Court's decision interpreting the Act in the interim regulatory program. In *In re Surface Mining Regulation Litigation* 456 F. Supp. 1301 (D.D.C. 1978), Judge Flannery held that surface mining regulations governing hydrology did not supersede, amend, repeal, or modify the provisions of the FWPCA program, even though the regulations extended beyond the FWPCA program. Thus, in a situation directly analogous to the issue here, the Court interpreted the Act to authorize regulations filling in a "regulatory gap." 456 F. Supp. 1314.

Moreover, legislative history supports the Office's interpretation of the Act. Senator Muskie, the key drafter of the Clear Air Act and Clear Water Act, made it clear that he was concerned chiefly with assuring that the Act would not license air or water pollution in excess of the Clear Air Act and Clean Water Act requirements. In the context of discussing the scope of EPA's concurrence under SMCRA, Senator Muskie used, as an example, the relationship of the Federal Water Pollution Control Act (FWPCA) to the SMCRA's requirements for the use of best technology to control the discharge of suspended solids.

Senator Muskie said the use of best technology still might not comply with the discharge requirements of

the FWPCA. He then emphasized that in this case "even the best technology would not be sufficient to allow the mining to go forward." (121 Cong. Rec. S-6201(1975).)

Although this concept was mentioned in the context of the FWPCA it is equally clear that it was intended to also control the relationship between the Clean Air Act and the SMCRA.

Thus, the key drafter of both the Clean Air Act and Clean Water Act clarified the relationship between the EPA statutes and the SMCRA. Congress intended that compliance with the SMCRA would not relieve an operator from compliance with other environmental statutes. Congress did not intend that compliance with other environmental statutes should relieve operators from compliance with the Surface Mining Act.

The language of Section 702(a) of the SMCRA, which provides that nothing in the Act can be construed as "superseding, amending, modifying, or repealing" the Clean Air Act and Clean Water Act, preserves this balance between the statutes. Nowhere in the legislative history is there language which indicates that Congress intended this language to reduce the performance standards of the Act to meet the requirements of other statutes. Nor did Congress ever suggest that implementation of the SMCRA proceed at the same pace as implementation of other environmental statutes.

With enactment of the SMCRA, Congress mandated a pervasive regulatory scheme covering all aspects of pollution from surface mining. As reflected in the ambitious timetable for implementation of regulatory programs, Congress recognized that implementaion of the SMCRA would proceed at an accelerated pace to protect the environment during accelerated coal production.

The Clean Air Act and Clean Water Act are generic statutes covering virtually every category of source. These statutes do not recognize the urgent need for regulations in place to protect the environment during the nation's accelerated coal production. To interpret the SMCRA to mirror these statutes would not be consistent with congressional intent.

7. Several commenters suggested that no adverse health effects can be attributed to fugitive dust generated by surface mining. Other industry and government commenters submitted data showing violations of the national ambient air quality standards within the vicinity of mine sites. (See e.g., DOE comments, Appendix C). The same commenters argued, however, that national ambient air quality standards for total suspended particulate from surface mines are inappropriate, because the standards were developed from studies of populations exposed to TSP arising from urban industrial emissions. Moreover, these commenters added that EPA is reviewing the national ambient air quality standards for particulate matter. Environmental group and citizen commenters said fugitive dust emitted from surface coal mining and reclamation operations is harming the health of citizens living in the vicinity of mining operations. These commenters suggested that the regulations should require compliance with both the 24 hour and annual ambient air quality standards.

The Office has decided to require a fugitive dust control and monitoring program for all Western surface mining activity with production levels in excess of one million tons of coal per year. This program is designed to protect public health and safety and the environment from fugitive dust emitted from surface coal mining activities.

With respect to comments on public health effects of fugitive dust from surface coal mining activity, the National Ambient Air Quality Standards are the standards for determining whether total suspended particulate matter levels in the ambient air jeopardize public health. Some commenters correctly pointed out that EPA is reviewing the air quality standards for particulate matter. This action is, however, in response to a statutory directive to periodically review such standards. According to EPA, the standards may be revised within two years to include an inhaleable particulate standard. To date, however, EPA has not rolled back the ambient air quality standards which have been the bulwark of the Clean Air Act for the past seven years.

Moreover, the ambient air quality standards do not distinguish between protecting citizens in urban areas from those in rural areas. Nor does the reference method for determining exceedances of the standards distinguish among total suspended particulate matter collected. (See 40 CFR 50, Appendix B).

This is not to suggest that forthcoming advances in such standards will not be incorporated in the Office's regulations. To the contrary, the Office believes the final regulations contain sufficient flexibility to accommodate advances in EPA air quality regulations, while at the same time provide necessary protection for public health and safety and the environment.

Several commenters questioned the statement in the preamble to the proposed rules which related the generation of particulate less than 10 microns in size to increased health effects. DOE estimated 3.4–6.0 percent of the total suspended particulate matter from surface mines is respired into the lungs. CEA suggested that retention of 10 micron size particles is perhaps three percent or less. Neither CEA nor DOE dispute the fact, however, that a 10 micron sized particle is respirable. Rather, both contend that the probability that such particles will be deposited in the deep lung is low.

In response to these comments, the Office points out that an EPA draft report submitted in public comments and referenced by DOE and others supports direct health effects from particles less than 15 microns in size rather than the Office's estimate of 10 microns. (Health Effects Considerations for Establishing a Standard for Inhaleable Particulate." at 1-14 EPA 1978). Thus, the Office estimate of the portion of particulate matter which would jeopardize public health might be low. Based upon the EPA draft report, a surface mine of one million tons a year could emit 185 tons of inhaleable particulate matter. This inhaleable fraction coupled with a total projected emission rate of 600 tons a year adds even additional support to the final regulations.

Moreover, the air quality requirements of the Act are intended to protect not only public health, but also public safety and the environment from surface coal mining and reclamation operations. Uncontrolled fugitive dust from surface coal mining actually can threaten public safety by obstructing vision on roads. Such uncontrolled fugitive dust can also jeopardize pristine national parks and wilderness areas. By establishing mandatory monitoring and fugitive dust control for all Western mines wth production levels in excess of one million tons per year, the Office is assuring that the requirements of the Act are met.

8. Both industry and environmental groups commented on the proposed production level of 1 million tons of coal per year which would have initiated both mandatory air quality modeling and monitoring for Western surface coal mines. Some industry commenters said potential production rate does not determine potential quantity of particulate matter generated. Other industry commenters referred to the PEDCO study at 56 which supports an average emission factor bf 1.2 lb/ton of coal mines. Thus, according to other industry commenters an average Western mine with a production level of 1 million tons per year would emit 600 tons per year of particulate matter. Environmental groups also cited PEDCO's average emission factor and agreed with industry's emission estimate of 600 tons/year. According to environmental group commenters, this argued for lowering the threshold for mandatory modeling and monitor-

ing to approximately 500,000 tons of coal per year. A mine of this size would generate, on an average 250 tons of particulate per year, which falls within the Clean Air Act's definition of a major emitting facility. After careful consideration, the Office has decided to retain the 1 million ton per year threshold for mandatory monitoring of Western surface coal mines for the following reasons.

First, this Office and now many industry and environmental commenters substantially agree with PEDCO's average emission factor of 1.2 lb/ton. It is emphasized that this is an average emission factor which falls within a range of projected emission rates for Western mines. PEDCO study at 56, 69, (1978). Based on this average emission factor, a 1 million ton per year mine will emit on an average 600 tons per year of particulate matter which is well over twice the Clean Air Act's defined rate for a major emitting facility.

Second, the mandatory nature of the regulations is substantially alleviated since this production level now only triggers mandatory monitoring.

Third, as the Office pointed out in the preamble to the proposed rule, to some extent portions of the fugitive dust will fall out in the permit area. A one million ton per year threshold for monitoring is designed to, in part, account for this phenomenon.

Finally, monitoring is an essential tool for air quality assessment. This threshold for mandatory monitoring will assure that the majority of Western surface coal mines are adequately monitored. Under the approved monitoring program, air quality samplers should be placed upwind and downwind of the operation to determine the impact of the operation on air quality. Through such air quality monitoring, the operator, regulatory authority, and public should be able to evaluate the effectiveness of fugitive dust control measures required under Section 816.95 of the regulations.

9. Industry commenters joined by DOE, CEA and EPA said an air quality review to ascertain compliance with National Ambient Air Quality Standards could prevent many Western mines from being permitted. This argument was premised upon computer modeled emissions from Western mines and on the inaccuracies of existing models to predict air quality impact. ERT Report at 4–1 (1978).

Environmental groups, on the other hand, said an air quality review prior to mining was essential to determine whether proposed fugitive dust practices are adequate.

The Office has decided to delete the requirement for an air quality review. The mechanism of prescribing fugitive dust control practices, then monitoring to determine the efficacy of such practices has been adopted in lieu of an air quality review. Additional fugitive dust control measures can be required if monitoring reveals air quality problems. This regulation thus accommodates the environmental groups' concern that adequate fugitive dust control measures will be applied by the operator while at the same time operators' permit applications will not be arbitrarily rejected based upon inaccurate modeling results.

10. Industry and government commenters said naturally occurring particulate alone can result in violations of air quality standards. Thus, according to commenters monitoring and fugitive dust control measures should not be required. Environmental groups argued for more detailed monitoring requirements to assure that air quality standards are achieved and maintained.

The Office has decided to require a monitoring program for all Western surface coal mines with production levels in excess of 1 million tons per year. The monitoring program can be designed so that naturally occuring particulate can be discounted by placing air quality samplers upwind and downwind of the surface mining activity. The monitoring program must also provide sufficient data to evaluate the effectiveness and additional need for fugitive dust control measures.

11. Industry commenters suggest that fugitive dust from coal mining activity has little effect on aesthetics and visibility. On the other hand, environmental groups contend that fugitive dust from surface mining activity will significantly impair visibility and affect aesthetics. The final regulations are intended to protect visual and aesthetic resources from surface coal mining activities. As one commenter pointed out, a proposed surface coal mining activity could reduce visibility in a national park by as much as 60%. (FOE comments at 6.) Moreover, another commenter submitted a series of photographs documenting the impact on visibility and aesthetics of controlled versus uncontrolled fugitive dust from surface coal mining activities. (Sierra Club comments at 2.)

With proper application of fugitive dust control measures and an adequate monitoring program such visual and aesthetic resources will be protected.

Environmental groups suggested that the proposed regulations did not provide for adequate prevention of significant deterioration (PSD) review. According to the commenters, failure to include a provision for PSD leaves out a very important air quality determination and contravenes the affirmative responsibility of the Department of the Interior for protection of Class I areas. Industry and government commenters said PSD determinations should be made by EPA and state air pollution control agencies.

To avoid conflict with the Clean Air Act's program for prevention of significant deterioration and protection of nonattainment areas, the Office has decided to not require separate demonstrations of compliance with these Clean Air Act programs beyond the requirement of section 508(a)(9) of the Act.

In response to environmental groups' concern that the regulations must adequately protect pristine areas, the Office believes the final regulations, coupled with section 522 of the Act and other Departmental programs will assure that the air resources of National Parks and Wilderness areas are protected.

12. Industry commenters suggested that section 515(b)(4) of the Act gives the Office, at most, the authority to control particulate matter from affected surface areas. According to commenters, the Office should not regulate SOx, NOx, CO, HC or any other pollutant besides total suspended particulate matter,

The final regulations require the control of fugitive dust from affected areas. OSM is not at this time promulgating separate regulations to control SOx, NOx, CO, and HC. However, section 508(a)(9) of the Act clearly requires the applicant for a permit to state the steps to be taken to comply with all applicable air quality laws. The Office is, therefore, not without statutory authority in this area.

§ 780.16 Fish and Wildlife Plan.

Authority for Section 780.16 is found in Sections 102, 205, 501, 503, 504, 507(b), 508(a), 510(c) and 515(b)(2), (10), (17), (19), (23), and (24) of the Act, The endangered Species Act of 1973, regulations of the U.S. Fish and Wildlife Service, and the Fish and Wildlife Coordination Act. Section 780.16 requires applicants for a mining permit to explain how they plan to minimize adverse effects of their mining operations on fish, wildlife and related environmental values, and achieve enhancement of such resources where practicable. The regulations also are intended to prevent harm to threatened or endangered species, and other wildlife or their habitats which are protected under State, Federal, or international laws. Required statements are to cover all species and habitats identified by studies conducted pursuant to Section 779.20. Plans must also show compliance with all standards of Section 816.97.

1. Section 780.16(a)(2) requires the applicant to assume the burden of establishing that enhancement is not

practicable as required by Section 510(b) and 515(b)(24) of the Act. In all cases when statements submitted pursuant to Section 780.16(a)(1) do not clearly show that enhancement of fish, wildlife, and related environmental values will result after mining and reclamation is complete, then the applicant is required to submit a statement explaining why, after using best technology currently available, enhancement is not practicable.

2. Section 780.16(b) requires a statement to be submitted as part of each application explaining what methods or management techniques will be used by the applicant to protect or enhance certain important species of fish and wildlife and their habitats which are of special significance as identified in studies conducted pursuant to 779.20. Species to be protected or enhanced include threatened or endangered species listed by either the Federal Government or the States, species specifically protected by State or Federal laws or international treaties, and other species or habitats identified to be of special significance.

Special habitats include habitats or components of habitats which are considered critical or limiting to wildlife or fish populations. Examples of such habitats are winter forage or cover areas, water supplies, nesting sites or areas, parturition areas, nursery areas, restrictive breeding areas, etc. Methods of protection may include location of roads or other ancillary facilities to avoid unnecessary human activity in such areas, construction of artificial nesting platforms, or devices to replace destroyed nest trees, construction of wildlife water impoundments, or guzzlers to replace destroyed or impaired watering areas, and numerous other techniques.

3. A guideline for methods and techniques for minimization of surface mining effects of fish and wildlife has been prepared for the U.S. Fish and Wildlife Service. This document "An Environmental Guide to Western Surface Mining", Part III: "Impact Mitigation and Monitoring" may be a useful information source for both Eastern and Western coal operators and may be obtained from OSM Regional Offices at small cost upon request.

4. Comments addressed five major issues pertinent to Section 780.16. Other comments could not be categorized into major issues and are discussed as independent recommendations. Since results of studies conducted under Section 779.20 are incorporated as part of the fish and wildlife plan required by Section 780.16, and such studies are the primary foundation upon which plans will be based, comments addressed in the Preamble for Section 779.20 were considered in determining the requirements of fish and wildlife plans.

Comments addressed whether requirements for a fish and wildlife plan pursuant to Section 780.16 is necessary or appropriate, in order to implement provisions of the Act. Comments recommended that Section 780.16 be deleted from the regulations. Some commenters said the Act does not require a fish and wildlife plan and that requirements of Section 515(b)(24) are met by other performance standards such as those for hydrology, revegetation, water pollution and sedimentation. Other commenters said that, if the study conducted under Section 779.20 identifies potential protection problems, the regulatory authority can impose impact control measures as conditions of the permit.

Commenters recommend that requirements for submission of a fish and wildlife plan be discretionary with the regulatory authority. Commentors add that, unless an endangered species is to be protected, there is no need for a detailed plan.

5. The Office has determined that the requirements of Section 780.16 are necessary to meet the mandates of Section 515(b)(24) of the Act which require the use of best technology currently available to minimize the adverse effects of mining on fish, wildlife, and related environmental values, and to enhance such resources where practicable. Unless a plan is prepared which establishes standards for protection of fish and wildlife and methods or techniques designed to meet those standards, there is no assurance that effects on fish and wildlife will be minimized.

Additionally, Section 515(b)(24) of the Act is not limited to endangered species, but extends to all species of fish and wildlife. The mere fact that State and Federal fish and wildlife agencies would be allowed to comment on wildlife protection needs under Section 779.20 would not provide adequate assurance that the requirements of Section 515(b)(24) of the Act would be met, or that such comments would be complied with. A plan as part of the permit application will assure compliance with Section 515(b)(24) of the Act. Although other performance standards, such as those for hydrology or water quality, will aid in fostering clean water and suitable habitat for some species of wildlife, compliance with these performance standards will not prevent direct mortality to fish or wildlife species, nor will such standards prevent degradation of terrestrial habitats.

In some cases significant adverse effects may be caused by a single small operation. If habitat disturbed is an area limiting on wildlife such as available water or a crucial nesting or breading area, very small areas of disturbance may greatly affect large populations of animals. (Odum, 1971, pp 117-125) If, in fact, little or no potential adverse effects have been identified from studies conducted pursuant to Section 779.20 then planning requirements will be minimal commensurate with the findings of the studies. Under combined procedures of Sections 779.20 and 780.16, excessive planning will not be required. For the above reasons the Office has elected to retain the requirements of Section 780.16 which require a fish and wildlife plan to be prepared for all species identified in studies conducted pursuant to Section 779.20.

6. Several commenters questioned whether certain operations should be exempt from the plan requirements of Section 780.16. Some recommended that small operations be exempt from requirements of preparing a fish and wildlife plan. Others recommended that no fish and wildlife plan be required for permit areas of less than 100 acres. Other comments placed the recommended minimum size at 200 areas. Commenters assert that disturbances of limited areas do not warrant the development of a fish and wildlife plan; therefore, the requirement of Section 780.16 is excessive for small operations. Comments said State regulatory authorities normally will have sufficient information available. It is further asserted by commenters that region specific, rather than site-specific, information is adequate to identify reclamation procedures to enhance fish and wildlife on small operations.

Commenters recommended that operations which will be reclaimed to certain land uses other than wildlife should be exempt from requirements of a fish and wildlife plan pursuant to Section 780.16. Commenters stated if the post-reclamation land use is proposed as agriculture, industrial, pasture etc., a fish and wildlife plan would serve no purpose. Commenters further state that the requirement for a fish and wildlife plan for residential, commercial, or industrial, land uses is meaningless and unnecessary, since these land uses are incompatible with wildlife.

Other commenters recommend that no exemptions be allowed because of the size or operation or post-reclamation land uses. They recommended wording which requires each application to contain a fish and wildlife plan, stating "the adverse environmental impact caused from a small operator could be as severe and as degrading as those caused by a large operator."

The Office has determined that exemption of significant effects regardless of the size of operation has no authority in the act. Section 515(b)(24) requires that adverse effects on fish

and wildlife be minimized and that fish resources be enhanced where practicable. The best means of assuring that permit conditions are adequate is to have clearly defined fish and wildlife protection and enhancement goals. The Office's reationale and findings presented in the Preamble for Section 779.20, are incorporated here by reference.

7. Commenters recommended that the applicant should "demonstrate", as opposed to "saying" that enhancement would be accomplished where practicable. No explanation of "demonstrate" was provided. Commenters said that the requirement to enhance is in conflict with the Act, because the Act requires only the return of land to original or better productivity.

Commenters said that to be consistent with the Act the words "where practicable" should be added following the word "enhancement," because Section 515(a)(24) of the Act requires "enhancement of such resources where practicable".

Several commenters said Section 780.16 should provide that reclaimed areas may not support original wildlife species. Commenters stated that "enhance" implies productivity higher than before reclamation which is not the intent of the Act. Some commenters recommend that a statement requiring the applicant to show how enhancement is practicable is required by Section 780.16(a)(1), and therefore Section 780.16(a)(2) should be deleted.

Commenters recommended that requirements for enhancement in Section 780.16(a)(2) be changed to allow the applicant to make a unilateral determination of practicability. Commenters add that the surface owner should be free to decide whether lands should be reclaimed for fish and wildlife purposes. Commenters recommended replacing the word "enhance" with the word "preserve" in Section 780.16(a)(1)(2). The commenters added that it is not the intent of the Act to impose an affirmative requirement to enhance fish and wildlife and related environmental values.

Commenters recommended that enhancement should not be required for an operation which disturbs less than 200 acres under a permit. Commenters assert that a requirement to enhance where practicable is burdensome and unnecessary for small operations in Appalachia. Commenters further asserted that region specific, rather than site specific, studies should be sufficient. Commenters stated that enhancement is not necessary unless the post-reclamation land use is fish and wildlife habitat.

The Office agrees that, to be consistent with the Act, the words "where practicable" should follow the word "enhance" in Section 780.16(a)(1). Section 780.16(a)(1) requires the applicant to provide a statement of how best technology currently available will enhance fish and wildlife and related values. Under Section 780.16(a)(2), the applicant has the burden of showing why it is not practicable to enhance fish and wildlife and related environmental values. The Office has determined that changing the regulation to allow the applicant to determine unilaterally if enhancement is practicable would have an effect of allowing the applicant to regulate itself. There is no authority in the Act which allows the regulatory authority to abrogate its responsibility by allowing such decisions to be made by applicants. The Act requires that land be reclaimed to a condition of equal or better productivity and Section 515(b)(24) of the Act requires that adverse impacts for fish and wildlife be minimized and such fish and wildlife resources be enhanced where practicable. The Office finds no authority, nor is there any evidence in the legislative history of the Act indicating that these requirements were intended to be subject to landowner approval. Often the surface owner also is the applicant. In such cases, the applicant could make unilateral determinations of the condition to which land would be reclaimed. This would not implement the intent of Sections 515(b)(2) or 515(b)(24) of the Act.

The Office has determined that replacement of the word "enhance" with either "restore" or "preserve" would not be consistent with the intent of the Act to "enhance" where practicable, or to reclaim to equal or better productivity. Section 780.16 does not require operators to enhance unless it is practicable to do so. Section 510(a)(b) of the Act required that the burden of establishing compliance shall be on the applicants.

8. Commenters addressed the need for a program for monitoring effectiveness of fish and wildlife plans prepared pursuant to Section 780.16. Comments recommended that State wildlife agencies monitor impacts of mining on fish and wildlife; the regulatory authority consult with the U.S.F.W.S. and State fish and wildlife agency regarding the adequacy of monitoring programs submitted as part of fish and wildlife plans; monitoring be of sufficient breadth and detail to adequately document the performance of the fish and wildlife plan; Section 780.16 be written to include monitoring requirements developed in conjunction with information collected pursuant to Section 779.20; and that small operations disturbing less than 200 acres be exempt from monitoring requirements.

Section 780.16(b) requires the applicant to provide a statement of how monitoring will be done for species and habitats identified by studies conducted pursuant to Section 779.20. The detail to which such monitoring will be done is not defined in the regulation.

The Office has determined that the consultation requirements of Section 779.20 and 786.17 provide adequate control of types of monitoring methods and techniques and the detail to which monitoring will be accomplished. The consultation process of Section 779.20 also provides for input from various wildlife or habitat management agencies pertaining to which species or habitat should be monitored pursuant to Section 780.16(b). Consultation procedures will foster adequate monitoring of the performance of fish and wildlife plans. The Office has rejected recommendations to exempt small operators from monitoring requirements based on the rationale previously stated for comments recommending similar exemption from requirements to prepare a fish and wildlife plan and requirements to enhance fish and wildlife resources where practicable.

9. Comments address which agencies or authorities should determine "best technology currently available" for minimization of adverse effects on fish and wildlife and enhancement of such resources. Comments recommended that Section 780.16 establish a clear role for State wildlife agencies to determine best technology currently available. Alternatives included:

(a) allowing wildlife agencies to determine best technology currently available with review by the US Fish and Wildlife Service;

(b) allowing the US Fish and Wildlife Service to be consulted by the regulatory authority in determinating best technology currently available; and

(c) allowing best technology currently available to be determined by State Wildlife or conservation agencies.

The Office agrees that State wildlife or conservation agencies and the U.S. Fish and Wildlife should have a role in determining the best technology for wildlife protection and enhancement in fish and wildfish plans prepared pursuant to Section 780.16.

The consultation requirements of Section 779.20 provide such a role in determining which species or habitats should be included in fish and wildlife plans, and the consultation requirement of Section 786.17 provide a similar role in assuring that plans utilize best technology currently available to meet the requirements of Section 515(b)(24) of the Act.

10. Other commenters addressed the following points.

(a) Comments recommended that Section 780.16 require compliance with the standards of Section 816.97.

The Office agrees with the rationale of the commenter and the wording of Section 780.16 (a) has been changed to accommodate this recommendation.

(b) Comments recommend that fish and wildlife plans prepared pursuant to Section 780.16 incorporate baseline information gathered by studies conducted pursuant to Section 779.20.

The Office agrees with the rationale of the commenter and has added appropriate wording in Section 780 (a)(1) to implement this recommendation.

(c) Comments recommended Section 780.16 should require fish and wildlife plans to contain a description of the restored biotic community.

A description of the premining biotic community is required in Section 779.20. The description of proposed post-reclamation biotic communities will to the extent possible be part of the fish and wildlife plan submitted pursuant to Section 780.16.

(d) Commenters recommend that Section 780.16 require statements from the USFWS regarding which impact control measures, management techniques, and monitoring methods are recommended for the site.

The Office has determined that consultation processes of Section 779.20 and 786.17(a)(2) are sufficient to allow USFWS to recommend such measures, techniques and methods.

(e) Commenters recommended that Section 780.16 require fish and wildlife plans to be submitted for formal review by USFWS prior to approval by the regulatory authority. The Office has added consultation requirements in Section 786.17(a)(2) to provide review by USFWS, in cases where fish, wildlife or habitat concerning their areas of responsibility are involved.

(f) Comments recommended that the wildlife plan be extended to species other than those protected by Federal or State laws. Many important species are not currently protected by law.

The Office agrees with the rationale of the commenter and has modified Section 780.16(b)(2) to include all important species indentified by studies conducted pursuant to Section 779.20.

(g) Commenters recommended that the word "unique" as used in proposed regulations be defined. A commenter stated that habitats of unique value are required to be protected; however, there is no definition for such habitats in the regulations or in the Act.

The Office has removed the phrase "unique values", from Section 780.16, and has replaced it with the phrase "unusually high values". Procedures for determining unusually high values are provided in the consultation process of Section 779.20.

(h) Comments recommend deleting the phrase "related environmental values" from Section 780.16 because this phrase is not defined in the regulations.

The Office has elected to retain the use of the phrase "related environmental values" in order to be consistent with the language of Section 515(b)(24) of the Act.

§ 780.18 Reclamation plan: General requirements.

1. Authority for this Section is found in Sections 102, 201, 501, 503, and 507 of the Act. Each of the Sections of 780.18 is required by additional Sections of the Act; these Sections are cited below. Each of these Sections is intended to provide information in the degree of detail necessary to enable the regulatory authority to determine whether the proposed mining and reclamation operation will be conducted in compliance with Subchapter K of these regulations. This purpose was previously stated in Section 780.17, but has now been moved to Paragraph (a) of this Section. Section 780.18(a) is intended to be a general introduction to all of the regulations following Section 780.18 which relate to the content of the reclamation plan. The remainder of proposed Section 780.17 has been deleted because it was either repetitive of other regulations or unnecessary, and proposed Section 780.19 has been numbered Section 780.18. Addition of a new Section (a) in Section 780.18 has, in turn, resulted in the remainder of this Section being renumbered as appropriate.

2. As originally proposed (Section 780.17), a reclamation plan under this Section would have required information relating to the lands within the permit area and adjacent areas. Section 780.18(a) now requires a reclamation plan only for those lands within the permit area. This change was made since all the reclamation activities under Section 780.18(b), which will be described in the plan, will take place within the permit area.

3. A few commenters suggested that the requirement which appeared in proposed Section 780.17 relating to identification of areas mined *before* February 3, 1978, was unnecessary. This map and plan requirement has now been moved to Section 771.23 of the regulations. As suggested by this comment, February 3, 1978, is not a date to which identification of areas mined is keyed, and Section 771.23 reflects this change.

4. Some commenters suggested that the introductory sentence of Section 780.18(b)(1) be revised to include information for the first five years of operation only. This comment was rejected since the regulations already limit the permit term to five years. (See Section 778.17; see also Section 786.25 for the showing necessary for a longer fixed term permit). Since the suggested language was unnecessary, no change was made.

5. Section 780.18(b)(1) requires a detailed timetable for the completion of each major step in the reclamation plan and Section 780.18(b)(2) requires a detailed estimate of the cost of reclamation together with supporting calculations. The authorities for these Sections are Section 506 (a)(7), 508(a)(5) and 509(a) of the Act. The Office has made one nonsubstantive change in paragraph (b)(1). The term "accomplishment" has been changed to "completion" to clarify that information in the timetable must describe how steps ultimately will be completed.

6. Some commenters suggested that Section 780.18 (b)(1) and (b)(2) be revised to tie the timetable to specific sub-areas within the total mine plan area to minimize the bond requirement. This suggestion was considered, but since incrementing the amount of the bond on sub-areas is already permitted under Section 800.11(b), the Office believes that no change is necessary in Section 780.18.

7. A few commenters suggested deleting Section 780.18(b)(2) since applicants ordinarily propose estimates for reclamation which are too low to be useful. Two other similar issues relating to Section 780.18(b)(2) were also raised. Some suggested deleting Section 780.18(2) on the ground that calculations underlying the estimated cost of reclamation are proprietory. Others suggested that Section 780.18(b)(2) be rewritten to require that estimated costs be "computed with the assistance of the regulatory authority." The suggested changes were not made in this Section for the following reasons.

The Office believes that the information called for under Section 780.18(b)(2) is necessary for the regulatory authority to determine the amount of the bond, particularly since, as required by Section 509(a) of the Act, the amount must be necessary to assure completion of the reclamation plan if the work had to be performed by the regulatory authority itself. Detailed estimates as well as the supporting calculations will enable the regulatory authority to make comparisons and decisions on bond amounts in light of its regulatory experience and knowledge. Deletion of Section 780.18(b)(2) on the basis of the data's confidential nature is unnecessary. Information which must be contained in reclamation plan may be withheld from the public pursuant to Section 786.15. The Office believes that inserting language relating to regulatory authority assistance is unnecessary. The

regulatory authority may at any time assist an applicant, and it is expected that some regulatory authorities may issue guidance to applicants on matters such as estimating costs of reclamation. However, the Office believes it inappropriate to require such assistance.

8. Section 780.18(b)(3) requires a plan for backfilling, soil stabilization, compacting and grading with contour or cross-section maps describing the anticipated profiles and configuration of the proposed permit area. Authority for this Section is Sections 507(b)(14), 508(a) (5) and (10), 515(b) (3) through (6), (8), (10), (11), (13), (17), and (22) of the Act.

9. Several commenters suggested that contour maps instead of cross-sections be required under Section 780.18(b)(3). It was suggested that contour maps are more useful documents and contain the information from which cross sections can be developed. The Office has accepted these comments but has retained cross-sections as an alternative. Accordingly, Section 780.11(b)(3) has been revised to reflect that either contour maps or cross sections may be submitted.

10. A few commenters suggested that Section 780.18(b)(3) be revised to state compaction requirements. No change was made because the Office believed that such a requirement is more appropriately considered under the performance standards. Compaction of topsoil is discussed under Section 816.24 and compaction of soil is covered under Section 816.101.

11. Section 780.18(b)(4) requires submission of a plan for removal, storage and redistribution of topsoil, subsoil and other material, and (b)(5) requires a plan for revegetation of the proposed permit areas, including at least the seven elements enumerated in the Section. These requirements appeared in the proposed regulations as one Section, 780.19(d). The Office has now separated the two requirements because they are distinct features of the reclamation process. Editorial, nonsubstantive changes were made in Section 7d8.18(b)(5) to clarify what the Office intended by "schedule of revegetation" (i.e., timing), and "success of revegetation" (i.e., comparison with the reference area).

12. Some commenters suggested that "plants and trees" as used in Sections 780.18(b)(5)) (ii) was too restrictive. The Office agrees and has thus changed the language to include seeds and seedlings generally. This comment also is reflected in the revised wording of Section 780.18(b)(5)(iii), which now related solely to methods rather than to amounts of seeds and seedlings. For the purposes of this requirements, seedlings means all plants propagated by both sexual and asexual reproduction.

13. Some commenters suggested that Section 780.18(b)(5)(iv) be revised to read, "Type of mulch to be used; rate per acre and method of applying material." The Office believes that all of these concepts are already included within the terms used in the regulation— "mulching technique." Therefore, no change has been made.

14. Section 780.18(b)(6) requires that the reclamation plan include a description of the measures to be used to maximize recovery of the coal resources. Authority for this Section is found in Sections 508(a)(6) and 515(b)(1) of the Act. No comments were received on this requirement. However, editorial changes have been made to make the language consistent with language used in the referenced regulation, Section 816.59.

15. Section 780.18(b)(7) requires a description of measures for disposal of materials which might be a fire hazard. Section 515(b)(14) of the Act is the authority for this requirement. Some commenters suggested that this Section also require a description of contingency plans developed to preclude sustained combustion of these materials. This alternative was considered and accepted as more nearly in accord with Section 515(b)(14) of the Act. Accordingly, this requirement has been added to 780.18(b)(7).

16. Section 780.18(b)(8) requires a description of the measures to be used to seal or manage various mine openings. Authority for this Section is Sections 507(b) (11) and (13), 508(a) (5) and (13) and 515(b)(10) of the Act. No comments were received on this Section. Editorial changes have been made to reflect the types of mine openings which must be managed, cased or sealed pursuant to Sections 816.13–15.

17. Sections 780.18(b)(9) requires a description of the steps to be taken to comply with Federal air and water laws and State air and water and health and safety laws. Statutory authority for this Section is Sections 508(a) (9) and (13) and 515(b) (4), (8) and (10) of the Act. Several commenters suggested revisions to this Section. Some suggested requiring the applicant to provide proof of meeting the stated requirements. Others questioned whether this Section required receipt of all other applicable permits as a condition precedent to approval of a permit to mine. Some objected to this requirement as unnecessary and burdensome in light of other agencies' duties to monitor compliance with other laws. All of these alternatives were considered. However, the Office believes that no change can be made in this Section. Section 508(a)(9) of the Act states without qualification that the reclamation plan must include a statement of "the steps to be taken to comply with applicable air and water quality laws and regulations and any applicable health and safety standards." Section 780.18(b)(9) merely requires description of the steps the applicant plans to take. This Section is not intended to require that all applicable permits be applied for and received prior to submission of a reclamation plan.

18. Section 780.19(h) of the proposed regulations would have required a description of how the mining equipment and facilities would be removed from the mining area. The commenters suggested that description of a plan is unnecessary since the performance standards already require removal of equipment. The Office agrees and has deleted this requirement. Readers are referred to the appropriate performance standard (Section 816.132).

§ 780.21 Reclamation plan: Protection of hydrologic balance.

This Section provides for the methods by which proposed activities are to be conducted to protect the hydrologic balance. Authority for this Section is found in Sections 507(b), 508(a), 509, 510(b), 515(b), 517, 701, 702, and 717(b) of the Act.

Information submitted pursuant to this Section will enable the regulatory authority to perform the assessments required by Sections 507(b)(11), 508(a)(13), and 510(b)(3) of the Act and 30 CFR 786.19(c), and to determine whether the proposed surface mining activities will be conducted in accordance with the following requirements of Subchapter K:

Reclamation Plan	Subchapter K
780.21(a)	816.41.
780.21(a)(1)	816.41–816.42; 816.46.
780.21(a)(2)	816.41; 816.42; 816.51; 816.52; 816.53; 816.54.
780.21(a)(3)	816.41; 816.51; 816.52; 816.53; 816.54.
780.21(b)(1)	816.41–816.44; 816.47.
780.21(b)(2)	816.41–816.42; 816.45–816.46; 816.49.
780.21(b)(3)	816.41; 816.51.
780.21(b)(4)	816.42; 816.52.
780.21(c)	816.41; 816.57.

Paragraph (a) of Section 780.21 requires each plan to contain a narrative description and supporting materials to assure the protection of the quality and quantity of water and the rights of present use to those waters in the mine plan and adjacent areas. This section principally implements Sections 508(a)(13) and 717(b) of the Act. An editorial change was made to this paragraph in the final rule, to cross-reference applicable portions of Parts 779 and 816.

Paragraph (b) requires the description of Subsection (a) to include four subsidiary plans to establish how Sections 816.41–816.57 of Subchapter K will be complied with. Technical literature used in consideration of this Section was the same as used for Sections 779.13–779.17 and Sections 816.41–816.57 of Subchapter K. Section 780.21(b)(1) principally implements Sections 508(a)(5) and 508(a)(12) of the Act. Section 780.21(b)(2) requires that the applicant propose specific quantitiative effluent limitations on the amounts of pollutants in discharges subject to 30 CFR 816.42 and appropriate treatment plans. It is intended that the regulatory authority will closely scrutinize the proposed plans under Section 780.21(b)(2), to ensure that the requirements of Sections 816.41–816.42 and 816.45–816.46 will be achieved by the proposed operations.

Section 780.21(b)(3) will provide the information needed to determine if the applicant will restore the approximate recharge capacity of the affected area at the conclusion of the mining operations. Section 780.21(b)(4) will implement the requirements of Section 517(b) of the Act and 30 CFR 816.52. Because the material at Section 780.21(b)(4) (i)–(x) of the proposed rule was redundant of Section 816.52, it was deleted in the final rule and replaced with an appropriate cross-reference.

Paragraph (c) requires that the application include the determination needed under Section 507(b)(11) of the Act. Certain specific water quality parameters, corresponding to those listed at 30 CFR 779.16(b)(2) are listed. The basis for requiring those parameters is discussed in the preamble to Section 779.16.

1. A number of commenters objected to proposed Section 780.21(c)(2), which required the applicant to provide a description of the probable cumulative impacts of all anticipated mining in the general area upon the hydrology of the area. Paragraph (c)(2) was deleted, since Section 507(b)(11) of the Act specifies that the permit application must only contain "a determination of the probable hydrologic consequences of the mining and reclamation operations. . ." The "assessment" is to be made by the regulatory authority " of the probable cumulative impacts. . . upon the hydrology of the area. . ." As a result of these changes, Paragraphs (c)(1) and (c)(2) in the proposed rules were combined into a single Paragraph (c). The regulatory authority is to make the assessment under 30 CFR 786.19(c).

2. Section 780.21(d) of the proposed rules was deleted, because the matter covered in it is adequately addressed at Section 779.13. Comments directed to Section 780.21(d) are treated with similar comments to Section 779.13 in the preamble to that Section.

3. Several commenters suggested replacing "mine plan area" with "proposed permit area" in Section 780.21(a). This was rejected. Sections 508(a)(13) and 515(b)(10) of the Act require that operations must minimize the disturbance to the prevailing hydrologic balance at the minesite and in associated off-site areas. In order to meet the requirements of the Act it is necessary that the reclamation plan address the mine plan and adjacent areas. (See also the discussion in the preamble to "mine plan area" at Section 701.5.) .

4. One commenter objected to the use of the phrase "the more stringent of the following" in Section 780.21(b)(2). However, the phrase was retained because it is required by Sections 505(b), 515(b)(10), and 702(a) of the Act. Commenters also objected to the expense of the requirements of 780.21, but gave no supporting data. The Office believes the requirements will not be excessive, for the same reasons as discussed in the preamble to Section 779.16.

§ Section 780.23 Reclamation plan: Post-mining land uses.

Statutory authority for this Section is found in Sections 102, 201, 501(b), 503, 504, 508(a), and 515(b) of the Act. Section 780.23 sets forth the criteria for use in preparing the post-mining land use analysis and plan. The analysis required by this Section should discuss and compare the information required to be submitted under other sections of the regulations (see 779.22, Land use information, and Section 780.18, Reclamation plan: General requirements, for example), and result in a complete evaluation of the net impact which the proposed mining and reclamation (including establishment of the proposed post mining land use) will have upon the usefulness of the area affected.

Section 780.23(a) requires each plan to contain a description of the use to which the land within the permit area will be put following reclamation. This description must include a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses and a discussion of the relationship of the proposed post mining land use to existing land use plans and policies. All reclamation plans must discuss how the proposed use is to be achieved and what support activities may be needed to achieve the use (Section 780.23(a)(1)), and the consideration which has been given to making all of the proposed surface mining activities consistent with surface owner plans and applicable state and local land use plans and programs. (Section 780.23(a)(4)).

A description and discussion of management plans to be implemented must also be included if the proposed post mining land use is to be range or grazing land (Section 780.23(a)(2)). Finally, where the pre-mining and proposed post mining uses are different, Section 780.23(a)(3) requires discussion and analysis of all of the information and criteria which will be used by the regulatory authority in approving an alternative post-mining land use under Section 816.133.

Section 780.23(b) requires that the applicant submit a copy of the comments on the proposed use by the legal or equitable owner of record of the surface, and by state and local governmental units which would have to initiate, implement, approve or authorize the proposed use.

As originally proposed, Section 780.23(b) would have required the applicant to obtain the comments of the surface owner of the entire mine plan area. Section 780.23 (a) and (b) now require a detailed description of the proposed use within the proposed permit area (Section 780.23(a), introductory paragraph), and a copy of the comments of the surface owner of the proposed permit area. (Section 780.23(b)). These changes were made as a result of comments and because establishment of the proposed use which is to be discussed and commented on in the reclamation plan will take place within the permit area during the permit term rather than the full mine plan area. It should be noted, however, that explanations of the relationship of the proposed use to existing land use policies and plans and of the consideration given to making the proposed surface mining activities consistent with applicable State and local land use plans and programs will necessarily involve a discussion and comparison of the lands and land uses outside of the proposed permit area, i.e., the mine plan and adjacent areas.

As originally proposed, Section 780.23 consisted of subsection (a), (b), (c). Proposed Section 780.23(b) has now been included within Section 780.23(a), and proposed Section 780.23(c) has been renumbered Section 780.23(b). In addition to these organizational changes, the Office has made editorial non-substantive changes in Section 780.23. In particular, numerous commenters pointed out a typographical error in Section 780.23(a)(3). The referenced regulation has been changed from 30 CFR 816.124 to 30 CFR 816.133.

Several commenters expressed a number of general objections to Section 780.23. Some commenters stated that Section 780.23 should require a statement describing the existing land

uses of the surrounding area. The Office made no change as a result of this comment since this information is required to be submitted under another section of these regulations (Section 779.22(c)). Some commenters complained that Section 780.23 does not require the applicant to identify that the post mining land use will be different from the premining use. The Office believes that Section 780.23(a)(3) clearly requires this information and that no further clarification is necessary. Thus, no change has been made in response to these comments. Finally, some commenters suggested that Section 780.23 be revised to include consideration of how the proposed post mining land use will be consistent with the premining land use. Again, the Office believes that no change is required here since this issue is covered elsewhere in the regulations. (See Section 816.133).

Several commenters objected to Section 780.23(a)(2) as unnecessary and overly burdensome. The Office believes that a detailed reclamation plan must be based on a detailed plan for postmining land use. In the case of range or grazing land which require some degree of maintenance, it is necessary to know historical carrying capacity, proposed postmining carrying capacity and site specific capability of the land in order to determine feasibility of the proposed use. The Office believes this information can best be provided in the form of a proposed management plan. Accordingly, no change was made as a result of these comments.

Some commenters questioned what would constitute a land use different from the premining use under Section 780.23(a)(3). As noted earlier in this preamble, a different or alternative land use occurs when any change of land use category within the permit area occurs. (See discussion of land use definitions in Section 701.5).

Some commenters suggested that a new subsection be added under Section 780.23(a) to require discussion of the relationship of the proposed postmining land use to existing natural resource or comprehensive management plans developed by state wildlife agencies. The Office has not made the suggested revision. The regulations already provide that these agencies will have an opportunity to comment if they must initiate, implement, approve or authorize the proposed use. (Section 780.23(b)) Note also that state and local land use plans and programs will be discussed under Section 780.23(a)(4).

Several commenters suggested that Section 780.23(b) should be deleted in its entirety as unnecessary and not required by the Act. These comments were rejected; Section 780.23(b) of the regulations is clearly required by the Act. (See Section 508(a)(3) of the Act).

§ 780.25 Reclamation Plan: Ponds, impoundments, banks, dams and embankments.

(1) Authority for this Section is found in Sections 102; 201; 501; 503; 504; 507(b); 508(a); 510(b); 515(b)(8); 515(b)(10); 515(b)(11); 515(b)(13); 515(b)(21) and 515(f) of the Act.

This Section requires each reclamation plan to include specific elements with maps and cross-sections of all water-holding facilities subject to the approval of the regulatory authority under Subchapter K. These elements must cover the construction, operation, maintenance, and removal of the proposed facilities.

(2) Technical literature used in formulating Section includes all literature used in developing Sections 816.46, 816.47, 816.49, 816.56, and 816.91-816.93 of Subchapter K. The reader is also referred to the preamble discussion of those Sections for information concerning issues bearing on Section 780.25.

(3) The requirements of Section 780.25 are intended to produce a thorough, well-planned design of the structures and facilities covered by this Section with proper maintenance, operational and emergency procedures provided for all aspects of the project.

(4) Paragraph (a) of Section 780.25 outlines a 2-phase plan submission process where limited general data is requested at the time of the original permit application and detailed design plans are required at some later date, but before construction of the structure.

(5) Paragraph (a)(1) of Section 780.25 specifies the general plan requirements that must be submitted with the original permit application. The information requested is the minimum necessary for the regulatory authority to assess the cumulative hydrologic impact resulting from structures that will be constructed as part of the surface mining operation and to determine the feasibility of the operations and reclamation plan insofar as impoundments and waste banks are concerned.

(6) Paragraphs (a)(2) and (a)(3) specify requirements for the detailed design plan that must be submitted and approved by the regulatory authority before each structure is constructed. The requirements for larger structures are different from those for smaller ones, based on the differences in the magnitude of risks to human safety, property, and the environment.

(7) Paragraph (b) specifies the design and plan requirements submitted for sedimentation ponds, including any sedimentation ponds intended as permanent impoundments.

(8) Paragraph (c) specifies the design and plan requirements submitted for permanent and temporary impoundments. These requirements include those contained in Mine Safety and Health Administration (MSHA) regulations.

(9) Paragraph (d) specifies the design and plan requirements for coal waste banks to meet the standard engineering requirements of the applicable performance standards.

(10) Paragraph (e) specifies the design and plan requirements for coal processing waste dams and embankments and reflects items necessary to determine the adequacy of the structure as specified in the Act and the performance standards of these regulations. A foundation investigation is necessary to assure the ability of the site to support suitably the structure and evaluate the seepage effects on the structure. Supervision by qualified persons insures that the investigation will be conducted in a manner which will achieve adequate subsurface exploration and testing. The forces and pressure of water can pose serious threats to the security of dams if not properly controlled; therefore, seepage analysis and control are of considerable importance in the design of safe dams. (Cedergren, H.R., 1967, p. 208.)

(11) Paragraph (f) specifies the requirement to include a stability analysis in the design of each sedimentation pond, permanent and temporary impoundment, or coal processing waste dam that exceeds certain size limitations. This requirement is consistent with MSHA regulations and is in accordance with U.S. Soil Conservation Service and U.S. Army Corps of Engineers requirements. Stability analyses are conducted on embankments and foundations to determine stability against failure from sliding, sloughing, or rotation along potential failure surfaces. (USSCS, 1967a, p. 5-2.) Based on results of stability analyses, problems relating to safety of embankment or cut slopes can be identified and corrected (Cedergren, H.R., 1967, pp. 305-308). Standard methods for testing and analysis must be utilized to achieve consistency in evaluation.

(12) Response to specific comments on the proposed rules are:

(a) One commenter suggested that since the regulations pertaining to the surface effects of underground mining operations contained in Section 784.16 are identical to the regulations covering surface mining contained in this Section, that Section 784.16 need not be repeated. The commenter recommended that a reference to Section 780.25 in Section 784.16 would suffice rather than repeating the entire Section.

The final rules retain separate provisions for the requirements pertaining

to surface mining and underground mining. Although this results in longer final rules, it will make it easier for the operators to locate the requirements for each specific type of operation. Retaining the specific Sections will also aid inspection activities since all requirements pertaining to surface mining and all activities pertaining to the surface effects of underground mining will be contained in separate Sections which stand alone.

(b) As originally proposed, the rules would have required that a detailed design plan for all impoundments and waste banks be submitted with the permit application. Many commenters suggested that the detailed design plans for all structures covered by Section 780.25 need not be developed at the time of application for a mining permit. Those commenters suggested that the permit submission for these structures be divided into a two-phase procedure, with the permit application containing a general plan for each structure, with the detailed design plans being submitted for approval at a later date, closer to the time that the structure is constructed.

The final rules incorporate the two-phase submission procedure recommended by the commenters. The permit application will contain the basic information required to provide the regulatory authority the information needed to assess the hydrologic impacts of the proposed mining operations and to make other broad determinations on the feasibility of the operation. It will also include a schedule and agreement concerning the submission and approval of the detailed design plans. The required information for the generl plan is contained in Section 780.25(a)(1). The detailed design plan will be submitted to and approved by the regulatory authority before construction begins on the structure. Requirements for detailed design plans for structures are contained in Sections 780.25(a)(2) and 780.25(a)(3). This regulatory procedure will provide the general data needed by both the regulatory authority and the interested public at the permit application stage to assess the general effects of the mining operations. At the same time, it will allow the operator the flexibility of carrying out the detailed geologic investigations and developing final design closer to the time when the structures will be constructed. The Office feels that under these rules adequate information is required at the permit application stage for meaningful public participation with respect to planned impoundments and waste banks. The Office also believes that the quality of the structures will not be compromised if the public comment/hearing process is not conducted for each detailed design submitted during the life of the permit, since high-level professional participation is required for such designs to assure sound planning.

(c) The proposed rules would have required registered professional engineers to approve all plans for sedimentation ponds and waste banks (proposed Section 780.25(b)(1) and (c) respectively (43 FR 41844, Sept. 18, 1978) and would have required either engineers or engineering geologists to conduct or supervise geotechnical investigations for all waste dams and embankments.

A few commenters stated that registered land surveyors are allowed to complete some structure designs by States that are currently regulating mining operations and recommended that the final rules should allow registered land surveyors to perform some designs.

The final rules allow registered land surveyors to certify the design of small structures other than sedimentation ponds and coal processing waste dams that are not regulated by the MSHA (Ifft, T.R., 1979s, p. 1, and pp. 266 and 312 of attachment; Ifft,. T.H. 1979s is a reference which outlines and documents procedures and contacts between OSM and the U.S. Army Corps of Engineers leading to the Chief of Engineers concurrence on the final rules required under Section 515(f) of the Act).

Section 780.25(a)(1)(i) is retained as required by Sections 507(a)(14) of the Act, but the detailed design plan was divided into two separate categories as defined by Sections 780.25(a)(2) and 780.25(a)(3). Registered land surveyors are permitted to certify those small structures (other than sedimentation ponds and coal processing waste dams) covered by Section 780.25(a)(3), on the grounds that they present less risk to health and safety, public and private property and the environment.

(d) Some commenters recommended that the wording "approved by a registered professional engineer" contained in proposed Sections 780.25(b)(1) and 780.25(c) should be changed to "certified by a registered professional engineer." This recommendation was accepted and wording contained in Section 780.25(a)(1)(i) has been revised to follow more closely that contained in Section 507(b)(14) of the Act.

(e) The proposed rules mentioned the need for determination that the site selected for the structure would adequately support the weight in various proposed sections, including Sections 780.25(a) ("geotechnical investigation"), 780.25(d) ("geotechnical investigation" and "structural competence of the bedrock"), and 780.25(d)(5) ("subsidence"). One commenter recommended that the subsidence survey explicitly required in proposed Section 780.25(d)(5) should be a general plan requirement for all structures covered by Section 780.25 rather than just applicable to coal processing waste dams and embankments. This recommendation was accepted because a subsidence survey is needed to insure the safety and stability of all proposed structures. This provision was moved to Section 780.25(a)(1)(iv) in the final rules.

(f) Several commenters recommended that the survey regarding the potential effects of subsidence of the subsurface strata referred to in proposed Section 780.25(b)(5) should be restricted to the effects of past mining operations.

The final rules restrict the survey covering the potential effects of subsidence on proposed structures to only subsidence that may result from past mining operations. The Office believes that adequate controls on future mining under structures are contained in the final rules (see Section 784.20) which makes it unnecessary for the survey required by Section 780.25(a)(1)(iii) to address possible subsidence problems that may result from future mining operations. In any case, analyses of effects of future mining at this stage would be highly speculative and of little value. These effects from subsidence would be discussed in the subsidence plan required by Section 780.20 for each future underground mining operation.

(g) A few commenters recommended that the "mine plan area" referred to in Section 780.25(b)(1) should be changed to "permit area". This recommendation was not accepted since the mine plan area is the overall area during the life of the mine which must be considered when making the determination concerning the permanent nature of a dam or impoundment and the cumulative effects of impoundments on the hydrologic balance.

(h) Several commenters requested that the requirement to submit design assumptions and calculations with a discussion of each alternative considered in selecting the specific design parameters and construction methods, as contained in proposed Section 780.25(e) (final rule Section 780.25(f)), be eliminated because the design must be certified that it meets the basic requirements by some responsible professional person. The commenter suggested that the certification statement should be the basis for the regulatory authority's approval of the design. This recommendation was not accepted because the regulatory authority must review and approve the final design of the structure and needs the information in order to have a full understanding of the project and to determine the safety, adequacy, and suit-

ability of the final design before granting final approval of the design.

(i) A commenter questioned whether the 200 acre-feet reference in proposed Section 780.25(e), now Section 780.25(f), was correct or if this should be 20 acre-feet. This reference was a typographical error in the proposed rules and has been corrected to 20 acre-feet in the final rules. The 20 acre-foot cut-off was clearly proposed on Sept. 16, 1978; explicitly in proposed Sections 816.46(q), 817.46(q) and by reference in proposed Sections 780.25(b), 784.15(a), 816.91(a), and 817.91(a).

(j) Another commenter recommended that proposed Section 780.25(d)(1), now Section 780.25(e)(i), discussing the need to determine the number, location, and depth of borings and test pits, be eliminated since these are not required for the size of structures normally covered by these rules. This recommendation was not accepted and the requirement is retained because it is the responsibility of the designer of the structure to determine the need for a geotechnical investigation and then present this information in a manner that will aid the regulatory authority in its review and approval of the design of the structure.

(k) A commenter recommended that the requirement to include a stability analysis for sedimentation ponds and coal processing waste dams and embankments which exceed 20 feet in height or impound more than 20 acre-feet contained in proposed Section 780.25(e), now Section 780.25(f), should be eliminated from the final rules because MSHA requires this in its regulations. This recommendation was not accepted because the Office is mandated by Section 515 of the Act to regulate the design of sedimentation ponds and coal processing waste dams and embankments. The requirements contained in the final rules are consistent with the requirements contained in MSHA regulations.

(l) Another commenter recommended that detailed plan requirements for sedimentation ponds, waste banks and waste dams and embankments, which were proposed as Sections 780.25 (b), (c), (d), and (e) should be deleted from the final rules because MSHA regulates all of these structures. This recommendation was not accepted because the Act specifically requires that sedimentation ponds, coal processing waste banks and embankments are to be regulated by the Office. It was also not accepted because MSHA is charged with miners' safety and this Office is charged with broader impacts on public safety and the environment. The design standards for these structures must be included in the final rules to assure that the regulatory authority and the public has the information needed to ascertain that the requirements of the regulatory program can and will be met for these structures, and that environmental and public health and safety concerns will also be met.

(m) One commenter recommended that a description of the character of the overburden be included with a description of the character of the bedrock as proposed in Section 780.25(d)(2) because the stability of a structure is determined by all the foundation materials. This suggestion was accepted and new Section 780.25(e)(2) includes a determination of the character of the overburden and bedrock in the geotechnical investigation conducted for coal processing waste dams and embankments.

(n) A commenter recommended that the requirement for sedimentation pond plans, proposed as Section 780.25(b), be expanded to itemize requirements pertaining to the removal of sedimentation ponds at the end of the mining operation period. This recommendation was not accepted since this requirement was covered in proposed Section 780.25(a) and is included in the final rules in Sections 780.25(a)(2)(iv) and 780.25(a)(3)(iv), which are applicable to all structures covered by Section 780.25.

(o) A few commenters recommended that the geotechnical investigation of the reservoir site referred to in proposed Section 780.25(d)(2), now Section 780.25(e)(2), should be eliminated and that the investigation be restricted to just the embankment area. This recommendation was not accepted since a sound geotechnical investigation should include descriptions of the expected behavior of foundation and reservoir rim materials at the site when subjected to both the changed geological environment associated with the construction and operation of the dam and the geologic processes occuring during the mining operation. The impoundment area or reservoir site area could contain geologic conditions that need to be considered in the design of the structure and the geotechnical investigation must include the analysis of any such areas.

(p) As discussed in Paragraph (4)(j) of the preamble for Section 816.93, a cross-reference to Mine Safety and Health Regulations 30 CFR 216-1 was added to Sections 780.25(b)(2), (c), and (e) in order to assure that this Office's and MSHA regulations are consistent concerning sign requirements at structure sites.

§ 780.27 Reclamation plan: Surface mining near underground mining.

Authority for this Section is Sections 102, 201, 501(b), 503, 504, 507(b), 508(a) and 515(b) of the Act. This Section requires that when surface mining activities are to be conducted within 500 feet of an underground mine, the applicant must provide sufficient information to enable the regulatory authority to determine whether the operation will be conducted in compliance with the requirements of Section 515(b)(12) of the Act and Section 816.79 of the performance standards.

No comments were received on this Section. However, the Office made editorial, non-substantive changes for clarity and consistency of terminology in this Section as follows: "Surface mining operation" was changed to "surface mining activities," a term defined in 30 CFR 701.5 having a narrower meaning than surface coal mining operations and more appropriate to usage in this Section in the final regulations. "Within the permit area" has been added to indicate clearly the scope of activities to which this Section is applicable. The reference to requirements of the regulatory authority and Mine Health and Safety Administration were deleted as unnecessary since the referenced Section 816.79 already refers to these entities.

§ 780.29 Diversions.

Authority for this section is Sections 102, 201, 501, 503, 504, 507(b), 508(a), 510(b), 515, and 517(b) of the Act. A description of diversions to be constructed within the proposed permit area is required, to enable the regulatory authority to determine how stream channels, overland, and shallow ground water flow will be controlled in accordance with Sections 816.43-816.44 and 816.57 of Subchapter K. In reponse to comments generally objecting to the specification of extension of the plans to the entire mine plan area, this section was restricted to the immediate proposed permit area in the final rules. OSM concluded that the detailed knowledge of exactly when and where all diversions will occur cannot ordinarily be determined for more than the time covered by one permit.

§ 780.31 Protection of public parks and historic places.

Statutory authority for this Section is found in Sections 102, 201, 501(b), 503, 504, 507(b), 508(a), 515(b), and 522(e) of the Act. Section 780.31 requires that the reclamation plan include a description of measures to be used to minimize or prevent harm to public parks and historic places. This Section also requires a description of measures to be taken to secure the approval of the regulatory authority and other agencies if such approval is required pursuant to Section 761.12(f). This Section is applicable only if the proposed operation has the potential of adversely affecting a public park or

a place included on or eligible for inclusion on the National Register of Historic Places, and is intended to provide the regulatory authority with sufficient information to accomplish the procedures of Section 761.12(f).

A few commenters suggested that a wide variety of areas of significance (scientific, historic, archaeologic, topographic, geographic, ethnologic, recreational, cultural, Indian culture) be substituted for the term "historic places." That term, as used in this Section, is intended as neither a limitation nor an expansion of the resources described in Section 761.12(f)—"places included on, or eligible for listing, in, the National Register of Historic Places." Since the resources identified by the commenters may already be listed or eligible for listing (see 36 CFR Part 60), the Office believes that the suggested additional language is unnecessary.

§ 780.33 Relocation or use of public roads.

Authority for this Section is found in Sections 102, 201, 501(b), 503, 504, 507(b), 508(a), 515(b), and 522(e) of the Act.

The information requested pursuant to this Section is necesary to ensure that public interests are protected where: (1) traffic flow, pavement stability and road profile may be endangered from mining operations and (2) to ensure that the quality of a temporary or new road is the same as or better than that of the road being relocated. This data will enable the regulatory authority to administer the provision of Section 522(e)(4) of the Act and Paragraph 761.12(d)(4) of these rules. The only changes made in this rule, since the proposed regulations, were editorial changes for clarity or consistency with other rules.

The reader is referred to the preamble discussion for Section 784.18 for a discussion of issues also considered in the context of this Section.

§ 780.35 Disposal of excess spoil.

Authority for this Section is found in Sections 102, 210, 501, 503, 507, 508, 510, and 515 of the Act.

Section 780.35 requires the operator to provide necessary plans describing the sites and structures to be used in disposal of excess spoil. These requirements are identical to requirements for other fill placement and embankment designs. For discussion of the permit requirements, the reader is referred to the preamble discussion for Section 780.25(d).

Section 780.35(a) requires plans and necessary backup materials (maps; cross-sections; etc.) including a geotechnical investigation of the proposed sites, in order for the regulatory authority to determine if the operator can comply with the performance standards of Sections 816.71–816.73 and 816.104–105.

Section 780.35(b) describes the basic requirements of the required geotechnical investigation. These requirements are the same as those required for coal processing waste dams and embankments, Section 780.25(d), and the reader is referred to that Section of the preamble for discussions of issues relating to these requirements.

Literature used to develop this Section is the same as identified in Sections 816.71–816.73 of these regulations.

Several language modifications have been made to the September 18, 1978 Section 780.35 of the proposed regulations as follows:

(1) In Section 780.35(b), the first sentence has been deleted because it reiterates requirements to comply with performance standards identified in Section 780.35(a); (2) A Modification to the language of Section 780.35(c) was made in order to reference Section 816.71(i) which has a more specific definition of steep slopes; (3) Section 780.35(c)(2) has been modified to read "engineering specifications" instead of "engineering parameters" because an "exact statement of particulars" is necessary to determine if the operator can comply with the performance standards; and (4) Section 780.35(d) has been deleted because the requirement for the analyses to be performed by a "registered professional engineer, engineering geologist or other qualified person" is identified in Section 816.71(b) and would be redundant if left in this Section.

Several comments suggested that a Paragraph be added to Section 780.35 to require the operator to demonstrate that excess spoil exists which cannot be placed into mine workings. This suggestion was rejected by OSM because this requirement is adequately covered in Sections 816.104 and 816.105 of the final regulations; however, it should be emphasized that spoil is allowed to be disposed of pursuant to Section 816.71–74 only when it is in excess of that necessary to comply with Sections 816.104 and 816.105.

A commenter suggested that disposal be treated in a manner to consider visual environmental aspects and harmonize with the surrounding environment. This suggestion is covered by the performance standards in Section 816.71(a)(3), and on this basis OSM has rejected it.

A comment suggested that the regulatory authority retain the discretion to not require all the geotechnical tests in Section 780.35(b), citing flat, stable locations as an example. OSM has determined that such an investigation is required by Section 515(b)(22) of the Act.

A suggestion to delete the last sentence of Section 780.35(b)(5) was rejected because OSM has determined that this information is necessary to properly evaluate the stability analysis as well as for the regulatory authority to enforce the permit.

A suggestion was received which would require the removal of combustible materials from mine refuse. While this practice may presently occur among some operations, present technology may not have progressed sufficiently to develop a reasonable requirement to be placed on all operators. OSM, however, encourages research in this area.

A suggestion to delete Section 780.35(b)(5) in its entirety was rejected by OSM because this Section is required in order to comply with Section 515(b)(22)(c) of the Act.

Several commenters indicated that to include design specifications and assumptions was creating a complicated permit and going beyond what is specified in the statute. For the regulatory authority to be able to evaluate a permit in terms of protecting the environment, the health and safety of the miners and public, and to protect the structural aspects of both the land and buildings, it is necessary that detailed specifications and assumptions be identified in the permit application.

Several commenters suggested the deletion of the last sentence of Section 780.35(b)(5) describing engineering design assumptions and calculations on the basis that it is indefensible to require data years in advance of construction. These suggestions were rejected because the intent of Section 780.35 and, in fact, the entire permitting process is to plan ahead to prevent the adverse effects of mining.

A commenter suggested that "excess spoil" be defined in Section 701.5 of the regulations. The reader is referred to that Section of the preamble for discussion of the definition of "excess spoil".

§ 780.37 Transportation facilities.

Legal authority for this Section is found in Sections 102; 201; 501(b); 503; 504; 507(b); 510(b); and 522(e)(4) of the Act.

Movement of coal within the mine plan area is generally accomplished by one or a combination of truck haulage, conveyor, or railroads. Transportation facilities also must be provided for the movement of people and equipment. Section 780.37 will provide the regulatory authority with information on the planned methods of coal, personnel, and equipment movement at the mine to ensure that transportation facilities are constructed, reconstructed, used, and maintained in a manner

which complies with 30 CFR 816.150-156, 816.160-166, 816.170-176 and 816.180 of Subchapter K.

Since the proposed regulations were published, modifications have been made in the references to Section numbers of the performance standards in Subchapter K to conform to the Section number changes in the final regulations.

Several comments were received on Section 780.37 and considered in development of the final rules.

1. One comment received suggested that the Section be revised to require the same degree of detail the Federal Land Policy and Management Act (FLPMA) requires for a right-of-way application for a road or a railroad. This proposal was rejected because Section 510(b) of the Act sets forth specific information to be submitted. A general narrative, as required under FLPMA, can be inadequate to assess cumulative impacts on the environment in all cases.

2. Several comments argued that each road or rail system used as access to the mine plan area should be covered by the operation plan requirements. Others felt that plans only should be required for facilities within the permit area. Those roads and rail systems within the permit area are covered. Requiring similar information for the entire mine plan area or beyond, was deemed overly burdensome and unnecessary, since each facility regulated under the Act will be covered by a permit application before it is built, and detailed specifications would not greatly assist the regulatory authority earlier. Certain types of engineering, mining, and design information simply would not be available for the entire proposed mine plan area at the time of the first permit application. Accordingly, Section 780.37 has been revised from the proposed regulations to require a detailed description only for facilities within the proposed permit area. Minimal information for the whole mine plan area will be required under Paragraph (e) only insofar as necessary to evaluate cumulative impacts of the mine and overall feasibility.

3. One comment suggested that a Section be added to allow the regulatory authority to require acceptable alternative information when it finds such information is needed as part of the transportation plan. This commenter's concern is adequately covered by Part 786 of the final regulations, which contains a number of processes available for persons to have a dialogue with the regulatory authority to maintain the planning flexibility needed to deal with specific circumstances.

4. Several public comments, as well as the limitation of the requirement for detailed plans to permit-area facilities, support the addition of Section 780.37(e) to require a general description for activities associated with transportation facilities within the proposed mine plan area. The intent of the general description for the mine plan area is to provide the regulatory authority with the fundamental information required—

(a) To obtain planning information in a manner which will minimize adverse effects on surface resources,

(b) To determine and recommend specific items to be considered for inclusion in permits for protection of resources and facilities,

(c) To arrive at specific actions needed to adjust plans and uses for potential cumulative impacts on the environment, and

(d) To inform, in a timely manner, interested persons of the general requirements of the operation over entire expected life of the mine.

5. One comment requested that applicants for permits should not be required to submit design information for existing nonconforming structures. The reader is referred to the preamble discussion of Sections 701.11(e), 784.12 and 786.21 for a discussion of this issue.

6. The Office considered requiring a description of the measures to be taken for road maintenance. This would have required that measures to be taken be submitted to the regulatory authority for approval. Such a requirement was rejected because maintenance-associated environmental problems are adequately covered in other parts of the regulations, including Subchapter K, and because the regulatory authority can always insist measures be adopted if, as a result of inspections or an analysis of the design, such measures are warranted.

7. Several comments raised objections to provisions in proposed Section 780.37(e), relating to special requirements for embankments over 15 feet in height. The comments correctly pointed out that if the culverts or other drainage structures are adequately designed to pass the proper precipitation event, a 15-foot embankment limit adds no environmental protection. Both MSHA and some State schemes have a 15-foot limitation, and to the extent such requirements will remain in effect, such a requirement in OSM's regulations would be redundant. The 15-foot limit has been deleted both in the performance standards and here. The reader is referred to the preamble for Sections 816.150-816.176 for further discussion of this issue.

PART 782—UNDERGROUND MINING PERMIT APPLICATIONS—MINIMUM REQUIREMENTS FOR LEGAL, FINANCIAL, COMPLIANCE, AND RELATED INFORMATION

Introduction

Part 782 concerns permit application contents for underground mining activities and corresponds to Part 788 for surface mining activities. As such, Part 782 sets forth the minimum requirements for approval of regulatory programs for general, legal, financial and compliance information required to be contained in applications for permits. This will provide the regulatory authority and the interested public with a detailed understanding of the nature of the entity which will mine the coal and the nature of the entities which have ownership interests in the property to be mined. Legal authorities for Part 782 are the same as those indicated in the preceding part of this preamble for Part 778 of this Subchapter, except to the extent that material differences between underground mining activities and surface mining have been identified by the Office.

As required by Sections 516 (a) and (d) of the Act, the Office has considered whether distinct differences exist between surface and underground mining as to the permit application contents requirements here involved. The Office has concluded that, with the exception of three matters, no such distinct differences exist because requirements for financial, legal, compliance and other non-technical information do not differ between surface and underground coal mining. The distinct differences identified are discussed in detail below.

1. The Office has identified differences of interests between surface and underground mining in Section 782.13. The Office believes that Congress in Section 507(b) of the Act intended that the regulatory authority determination required under that Section be made both with respect to the interest of surface area owners where surface operations and facilities may affect them and to the interest in the coal estate that is to be mined. Additional explanation of the intent of this Section is located in the preamble discussion of Section 778.13.

2. The Office has identified differences between surface and underground mining regarding right of entry and operation information (Section 782.15). The Office believes that Section 510(b)(6) of the Act requires that the regulatory authority determination be made only with respect to the interest of surface area owners where the actual mining of coal on the surface is involved and not to under-

ground mine workings. Accordingly, Section 782.15(b) has been limited to requiring information regarding the right of the applicant to conduct mining operations only where underground mining activities would involve the actual surface mining of coal that has been severed from the private surface estate. For example, the applicant would be required to explain its right to conduct surface mining during the development of the face-up area for an underground mine, or if dams or other facilities are to be located on the surface. The applicant would not, however, have to specifically establish its right to conduct underground mining under Section 782.15(b).

3. The third material difference identified from Part 778 was in the description of the phasing of the proposed operations over the entire life of the mine, as required by Section 782.17(a). That Section has been modified from the corresponding provision in Part 778 to provide the public and regulatory authority with an understanding of the sequence of the proposed operations in both surface and underground areas to fully reflect the requirements of Sections 507(b) (8), (14) and 508(a)(1) of the Act.

(c) Most of the comments addressed to Part 782 raised issues similar to those which were made in Part 778. Accordingly, the disposition of comments in the preamble to Part 778 serves similarly for most of the comments to Part 782. Where changes were deemed necessary to Part 778, appropriate modifications were also made to Part 782. See 30 CFR 782.13 (a), (d), (g); 782.14(c); 782.15; 782.16(a), (c); 782.17(a); 782.19(c); and 782.21. In addition, the definition in Section 782.5 of the proposed rules has been moved to Section 770.5 because the term involved is also used in Part 778.

(d) Comments which specially focused on Part 782 were as follows: 1. *Section 782.13(a).* Commenters objected to the requirement for the inclusion of information on surface property owners in a permit for an underground mine because surface owners were not involved in the underground mine operations. The objections were accepted in part and Section 782.13(a), (2), (3), and (4) were altered by changing "property to be mined" to the phrase "areas affected by surface operations or facilities" and adding "coal to be mined."

Information is needed on surface ownership in areas affected by surface operations and facilities because of the substantial impact those operations and facilities can have. However, for lands which will only overlay underground mine workings, detailed knowledge of surface owners is needed only to the extent required to implement Sections 784.20 and 817.121–817.126. Those Sections provide authority for obtaining that information when needed. Regarding information on ownership of the coal to be mined, commenters did not show, and the office sees no basis for altering the Congressional policy articulated in Section 507(b)(1)–(2) of the Act for underground mining activities.

2. *Section 782.13(b).* A few commenters contended that the term "surface mining operation" was misused in Section 782.13(b)(3). This comment was accepted and the term "surface coal mining operation" was added. This term, as defined in Section 700.5 now includes surface impacts incident to an underground mine. This same change was also made in Section 782.14(c)

3. *Section 782.13(e).* Objections were raised to the requirement of listing all owners of property continguous to the permit area, rather than just mineral owners, and owners in areas contiguous to areas affected by surface operations.

The comments were not accepted, since Section 516 of the Act does not authorized the Office to enact a waiver for the complete exemption of underground mine workings from permit requirements. Section 516(d) of the Act provides authority only to modify "permit application requirements," and permit "procedures," not substantive standards as to what activities must be regulated under a permit system. Moreover, as Congress was well aware, the location, construction, and long-term maintenance of underground workings can cause substantial, adverse impacts on the environment and public health and safety if not properly controlled. See Sections 516(b) (2), (9), (12) protection against water pollution discharges from underground mine workings), 516(b)(11) (protection of fish and wildlife); 516(b)(1) and 516(c) (protection of lands and structures overlying underground workings) of the Act. The Office therefore must conclude that Congress intended for underground workings to be included within the permit area and subject to regulation under permit systems.

Section 782.13(e) is based upon the express language of Section 507(b)(2) of the Act. Underground mine workings can be laid out, constructed and operated to adversely affect adjacent coal seams, depending upon the methods of mining used, particularly if underground blasting is involved. It is important, therefore, for the regulatory authority to know who is responsible as the legal owner of adjacent coal seams so that these persons can be advised of potential threats to their resource interests. In addition, this information is important for the regulatory authority to know in the event that action in one set of underground workings drains water from adjacent workings for the purpose of determining legal responsibility for water pollution resulting from discharges of the combined drainage. *See, e.g., Commonwealth* v. *Barnes and Tucker Co.*, 455 Pa. 392, 319 and 871 (1974), *aff'd. aft. remand*, 472 Pa. 115, 371 and 461 (1977).

4. *Section 782.14(a)(1).* Commenters considered that the term "mining permit" in Section 507(b)(5) of the Act, when applied to underground mining, could mean more than just reclamation-type permits. The use of the term "permit" is defined by Section 701 of the Act and 30 CFR 701.5 to indicate clearly the exact type of permit being considered for underground mining operations. Therefore, no change was deemed necessary to this Section.

5. *Section 782.16(a).* Some commenters suggested that the statement of whether the proposed permit area is limited for underground mining operations should apply only to actual surface disturbances areas. Parts 764 and 765 specify the areas and types of operations that are to be considered in this required statement. Adding the words suggested by the comments would, therefore, be redundant to those parts.

6. *Section 782.16(c).* Several commenters raised questions about existing structures and affected areas. The Office has revised and clarified the requirements of this Section to be consistent with the changes made in Sections 701.11, 780.12, 784.12 and 786.21 and are discussed in the preamble to those Sections.

7. Some commenters suggested that Section 782.17 be revised to require that permits for underground mining activities be issued, in all cases, for the entire life of the activities, rather than ordinarily limited to a five-year term under 30 CFR 786.25(a). The Office did not accept these comments for several reasons.

The commenters argued that permits extending for the full life of the operations are needed for the applicant to be able to obtain financial commitments for construction of mine-related facilities. No data were submitted to support that argument. This made it impossible for the Office to fully evaluate the comment, particularly as to the question of why a permit term for the full life of an underground mine would be necessary, as opposed to one which extends beyond five years only for an additional increment limited to the time necessary for the applicant to obtain the necessary financing of equipment and to open the mine.

This was important because the Office's review of the relevant provisions

of the Act revealed that although Congress decided to allow for permit terms of greater than five years, those extensions were to be limited only to the additional increment of time which the applicant needs to obtain financing for equipment and opening of the operation.

Section 506(b) of the Act provided that permit terms are to be limited to a maximum of five years, subject to the following exception: ". . . if the applicant demonstrates that a specified longer term is *reasonably needed to allow the applicant to obtain necessary financing for equipment and the opening of the operation* and if the application is full and complete for such specified permit term." (emphasis added)

The language of this provision itself indicates that Congress intended that the exception to the five year permit term be limited only to the increment needed for obtaining financing for equipment and opening of the operation. First, extensions beyond the five year permit term are an exception to a general provision, which must be narrowly construed. Second, the exemption is qualified to a period of neccessity for both obtaining financing *and* opening of the operation, indicating that Congress intended it to be administered with particular emphasis to the time period needed to commence operations, and not for the purpose of facilitating the conduct of mining operations in the long run.

This view is also supported by the provisions of Section 506(d) of the Act, regarding renewals, whereby at the end of a permit term, the permittee is subject to scrutiny by the regulatory authority to ensure that operations will continue to be conducted in compliance with the Act. This is an important provision which would be superfluous, if the commenters suggestions were accepted, because there would be no permit renewals as the permit term would not expire until the operations involved had ceased. Such a result is contrary to accepted principles of statutory construction.

In addition to the wording of the Act, the legislative history of Section 506(b) confirms the Office's views that the exception to a five year permit term was only for a quite limited increment. The exception was inserted into the 1977 House bill, at the suggestion of the Secretary of the Interior. (See, H.R. Rep. No. 95-218, 95th Cong., 1st Sess. at 156 (1977).) The object of an exemption, said the Secretary, was to ". . . give the mine operator a permit for a time period adequate for developing a site and obtaining financing." The House bill (H.R. 2) was amended to provide for the exemption that was enacted at Section 506(b) of the Act. The House Committee explained the amendment as authorizing the issuance of a permit for longer than five years ". . . where necessary for the leadtime financing of the operation . . ." *Id.* at 63

Given the language of the Act and its legislative history and the lack of the substantiation submitted by the commenters, the Office has concluded that Section 782.17 should not be revised to allow for permit terms for underground mines that extend to the full life of the entire mine. Instead, those mines will be entitled to a permit term longer than five years only under the provisions of Sections 782.17(c) and 786.25(a), which authorize an extension only for the additional increment equal to that necessary to obtain financing of equipment and opening of the operations. The Office does not believe that this will pose an undue burden on the industry, in view of the right to successive renewal of the permit for operations, within the relevant permit areas under Sections 506(d) of the Act and 30 CFR 788.13-788.16.

8. *Section 782.20.* A commenter objected to depositing a copy of the permit for public inspection at the same time the application is filed. The reason was that the public office for depositing of the permit was undetermined. The comment was rejected, as Section 507(b)(6) of the Act clearly implies filing for public inspection at the time of permit application and the public can be advised of the copy location by the newspaper advertisement.

PART 783—UNDERGROUND MINING PERMIT APPLICATION—MINIMUM REQUIREMENTS FOR INFORMATION ON ENVIRONMENTAL RESOURCES

Introduction

1. Part 783, corresponding to Part 779 for surface mining activities, establishes minimum standards under regulatory programs for the Secretary's approval of permit application requirements for information on the existing environmental resources that may be impacted by underground mining activities. With this information, the regulatory authority is to utilize information provided on mining and reclamation operations under Part 784 to determine whether the proposed activities will be conducted in compliance with Part 817 of Subchapter K.

2. The authority, basis, and purpose of Part 783 were generally discussed at 43 FR 41706-41707 (Sept. 18, 1978) which is incorporated herein by reference. Part 783 is adopted under Section 516(d) of the Act, to account for distinct differences between underground and surface mining activities. However, there are many points covered in Part 783 for which material differences do not exist. Indeed, most of the comments addressed to Part 783 raised issues similar to those which were made on Part 779. Accordingly, the disposition of comments in the preamble to Part 779 serves similarly for most of the comments to Part 783. Where changes were deemed necessary to Part 779, appropriate modifications were also made to Part 783.

3. The Office did identify a number of distinct difference for Part 779, which are discussed in detail below for individual Sections, particularly in the description of geology, vegetation, fish and wildlife resources, land use, surface topography, and prime farmland identification.

4. Some commenters raised broad objections to Part 779, with respect to the coverage of underground mining activities that pre-exist the effective date of the permanent program regulations. These commenters provided no supporting rationale for their objections, aside from a citation to Section 516(d) of the Act. The Office has not adopted this recommendation, although it has generally provided some lesser degree of regulation for existing structures.

Congress intended that both new and existing aspects of underground mining activities be regulated under the Act, as is evident from the language of Section 506(a) of the Act, requiring that permits be obtained under the permanent regulatory program for any surface coal mining operations. Those operations are, in turn, defined at Section 701(28) of the Act to include underground mining activities, without regard to whether they predate the permanent regulatory program. Similarly inclusive language is used in Section 516 (a) and (b) of the Act for underground mining activities.

Given Congress' recognition of the substantial adverse environmental affects resulting from past underground mining (see H.R. Rep. No. 95-218, 95th Cong. 1st Sess. at 125-127 (1977)), the Office does not believe that Section 516(d) of the Act ought to be interpreted to eliminate the existing aspects of underground mining activities from scrutiny under these regulations. *See* H.R. Rep. No. 95-218, *supra.* at 93. To the contrary, the regulatory authority will need detailed information on those activities to ensure that they will be brought into compliance with the standards of the permanent regulatory program. *See* 30 CFR 701.11(d)-(e), 784.12, and 786.21.

5. Several commenters also raised objection to Part 779 with respect to the coverage of any areas outside surface operations and facilities of underground mine workings. The implica-

tion of these comments would be to exclude descriptions of resources on lands overlying underground mine workings, subsurface areas where underground workings will be located, and resources of lands located outside the proposed permit area. The Office did not adopt such broad exemptions The commenters offered no data establishing that the areas they sought to exclude are irrelevant for the purposes of proposed underground mining activities. To the contrary, impacts in these areas can be quite severe and were intended to be regulated by Congress.

Congress specifically recognized that underground mining activities can cause serious disruption of surface areas that are not themselves direct objects of actual mining operations, through subsidence and disruption of water and fish and wildlife resources. See Sections 516(b) (2), (9), (11), (12), and 12(c) of the Act. See also, preamble discussions to the definitions of "adjacent area" and "affected area," and to Sections 817.121–817.128 of the regulations. Discharges of water from underground mine workings can have severe effects which Congress also clearly intended to be regulated. *See* Sections 516(b)(9), (11) of the Act. See the preamble discussions to Sections 784.14, 817.42.

Given that recognition, the regulatory authority needs to be provided with adequate information on areas overlying underground mine workings, the strata in which those workings will be located, and adjacent areas, to determine whether the proposed activities will be conducted in compliance with the Act.

OSM has recognized, however, that descriptions of some of the types of environmental resources involved may be limited to areas affected by surface operations and facilities only or described in much less detail for other areas. This recognition is explained in the preamble discussions below for individual Sections of Parts 783–784.

6. Several commenters objected to proposed Parts 782, 783, and 784, asserting that requiring such detailed information would make it very difficult for applications to be filed within the two-month deadline proposed Section 771.19) after institution of a State or Federal permanent regulatory program. These commenters suggested that the deadline be delayed by allowing for subsequent submission of data until as late as 17 months after a State or Federal program is approved by the Secretary. In many respects, these comments were similar to those generally raised to the same two-month deadline specified at proposed Sections 771.13(a) and 771.19(a). Those comments were not accepted for the reasons explained in the preamble discussion above for Sections 771.13(b)(1) and 771.21(a)(1) of the final rules. For the same reasons, the Office did not accept the similar comments related to Parts 782, 783, and 784.

Further, the commenters submitted no information on this issue that showed that the burden of meeting the two-month deadline is more onerous for underground mining activities than for surface mining activities. Indeed, the only difference discussed by the commenters indicated that small underground mines involve the disturbance of substantially less surface area than do surface mining activities, a factor indicating that the small undergound operations should have even fewer problems meeting the two-month deadline.

The commenters also suggested that less restrictive permitting requirements be adopted for small underground mines. No such general requirement has been adopted, however, because no data has been identified that would establish a rational relationship between the size of an underground mine operation to the need for particular items of permit application information. The final rules' restriction of some Sections in Part 783 to only areas affected by surface operations and facilities will, however, substantially benefit small underground mines.

The commenters questioned how the applicant is to prepare its materials prior to approval of a particular permanent program in order to meet the two-month deadline for those provisions of Parts 783–784 which commit discretion to the regulatory authority as to the level of detail of some of the application information to be required. Existing operators will be able to receive substantial guidance from the staffs of both the OSM Regional Directors and the existing State regulatory authorities, based on proposed versions of State program requirements which are already under development and on the technical expertise of those staffs. In this regard, the Office intends to effect close coordination with State agencies to resolve permit application questions as early as possible.

§ 783.11 General requirements.

1. Section 783.11 is the underground mining activities companion to Section 779.11 for surface mining permit applications. Many of the same comments were received on these Sections and, in the final regulations, the wording of the two Sections is the same. The authority, basis, and purpose for the final rule is the same as set forth in the preamble for Section 779.11, and, in addition, Section 516 of the Act.

2. As to the comments on Section 783.11 which raised the same comments as did those to Section 779.11, the preamble to Section 779.11 serves to dispose equally of those to Section 783.11. In addition, several comments on Section 783.11 suggested that information on environmental resources be limited, for underground mines, to only land affected by surface operations and facilities.

These commenters argued, but provided no data to substantiate their position, that underground mines should not be required to provide information for the entire mine plan area, because the disturbed surface areas represent a relatively small portion of the entire mine plan area. OSM has not accepted these comments because, as explained in the preamble to Section 779.11 and in the introduction to Part 783, the pervasive nature of these environmental resources prevents such restrictions; if such information were categorically limited to only surface disturbed areas, the regulatory authorities would not be provided with sufficient information to evaluate the environmental impacts of underground mines.

3. These commenters also suggested that, to the extent potential subsidence effects need to be accounted for in the application, they can be handled completely under Section 784.20. These comments were rejected because Section 784.20 concerns only an operation and reclamation plan, and is not a description of resources that may be impacted by subsidence. The regulatory authority needs information under several Sections of Part 783 in order to determine whether the plan submitted under Section 784.20 is adequate.

§ 783.12 General environmental resources information.

1. Section 783.12(a) is the underground mining companion to Section 779.12(a), for which the preamble is applicable to 783.12(a). Sections 783.24(c) and 784.22(a) are the underground map and plan requirements that complement the narrative description required under Section 783.12(a).

Several commenters suggested changes to this Section that would require only general information on the timing of mining activities and number of acres to be disturbed during the life of the mine. They argued that this new language was necessary to deal with alleged differences of underground mining, where certain conditions may require an operator to change mining sequence and timing of subareas within the overall mine plan.

OSM has not accepted this change. 30 CFR 788.11–788.12 provides adequate opportunity for the permittee or the regulatory authority to revise a permit, where necessary to reflect any

changes in the sequence and timing of mining. Second, whenever a permittee applies for a permit renewal under Section 778.13, there is an opportunity to change the descriptions that are required by Section 783.12(a). These opportunities for revisions and renewals should satisfy the commenters' concerns about Section 783.12(a).

2. Section 783.12(b) serves the same purposes as Section 779.12(b) for underground mining. Because the two Sections are so similar, most comments received on either Section were considered applicable to both Sections and discussed in the preamble to final Section 779.12(b).

3. One comment was received which applied only to Section 783.12(b). This commenter recommended that "mine plan area" be replaced by "actual surface disturbance area," arguing that this would be more consistent with Section 507(b)(13) of the Act. OSM rejected this suggestion, because Sections 102 and 522(e) of the Act and the National Historic Preservation Act (NHPA) protect important cultural and historical resources from all adverse effects of underground mining activities.

In particular, subsidence from underground mining could cause harm to historical and cultural structures overlying those workings. See the technical literature listed in the preamble to Section 817.121–817.128 and the preamble discussion at the introduction to Part 783.

§ 783.13 Description of hydrology and geology. General requirements.

(1) The basis and purpose of this Section are the same as for Section 779.13. Authority for the Section is derived from Sections 102, 201, 507(b), 508(a), 515(b), and 516 (a) and (d) of the Act.

(2) Comments addressed to this Section were substantially identical to comments to Section 779.13. Therefore, the discussion of issues and their resolutions in the preamble to Section 779.13 also applies to Section 783.13.

(3) The Office has determined that the distinct differences between surface coal mining and underground coal mining do not require substantive differences between this Section and Section 779.13, because both Sections state only general principles.

(4) Minor editorial changes from the proposed rules of a nonsubstantive nature were made by the Office and are discussed in Section 779.13.

§ 783.14 Geology description.

1. Authority for this Section is found in Sections 102, 201, 503, 504, 506, 507(b), 508(a), 515(b), 516 and 517 of the Act. This Section would implement the requirements of the Act for geologic information necessary for applications for permits for underground mining activities.

2. The information collected pursuant to paragraph (a) of this Section will enable the regulatory authority to perform the assessment required by Sections 507(b)(11), 508(a)(13), and 510(b)(3) of the Act and to determine whether the applicant can comply with Sections 817.13–817.15, 817.41–817.58, 817.59, 817.61–817.74, 817.81–817.89, 817.91–817.93, 817.99, 817.101–817.105, 817.121–817.128, and 817.150–181 of Subchapter K. Technical literature used is the same as for Sections 779.14 and 816.121–816.128. See also, Hardaway, et al. 1978. Paragraph (b) of 783.14 allows for a waiver of the requirements of 783.14(a) pursuant to Section 507(b)(15) of the Act, when the regulatory authority already has at its disposal sufficient geological data about the proposed mine plan area to make further data collection unnecessary.

3. Most comments addressed to this Section were substantially identical to comments to Section 779.14. Therefore, the discussion of issues and their resolutions in the preamble to Section 779.14 also applies to Section 783.14. However, the Office has identified and accounted for certain distinct differences between surface mining and underground mining activities, with respect to the types and extent of geologic information needed in permit applications, leading to differences in Section 783.14. The general basis for the distinctions was discussed at 43 FR 41706–41707 (Sept. 18, 1978).

4. Several commenters requested that this Section be amended to require that the report produced under Paragraph (a) be accompanied by a summary easily understandable to the lay person. This was not done, because of the extra expense involved and the expectation that the regulatory authority will assist the interested public by explaining particularly difficult materials.

5. Several commenters suggested changes in Section 783.14 (a)(1) and (a)(2) which related to the detail of the information requested. One commenter felt that Paragraph (a)(1)(iv) should be revised to state specifically some of the parameters which should be reflected in the analyses. However, the Office feels this is covered adequately under the main text of Paragraph (a)(1), which requires a detailed description of the physical and chemical characteristics of the overburden. Another commenter suggested that proposed Paragraph (a)(2) should require information for each stratum of the overburden, on the ground that "each strata" (sic) describes and defines what part of the overburden should be analyzed. The Office accepted this alternative and clarified the language to include "geology of the strata in those areas to be affected. . . ." It is the intent of the Act (Section 507(b)(14)) that the permit applicant provide or compile data only on "the area to be affected".

6. Three commenters suggested that the language of proposed Sections 783.14 (a)(1) and (b)(1) be revised to state that the work requested under these Sections be done under the supervision of a qualified geologist or registered professional engineer. The Office rejected this proposal, because these matters are adequately specified by Section 507(b)(14) of the act and 30 CFR 783.24–783.25.

7. One commenter suggested that the "acid-producing nature of a coal seam cannot be correlated with the sulfur content or the abundance of pyrite in the coal," citing BCR Report L–822, *Assessment of Research and Development Needs and Priorities for Acid Mine Drainage Abatement U.S. Bureau of Mines, 1977.* (Prepared by Bituminous Coal Research, Inc. Monroeville, Pa. Final Report on Contract No. JO5 65044. See pp. 7–29).

The Office is aware that standardized field methods for determining the acid/toxic-forming potential of coal and overburden have not yet been routinely used in all areas of the country. Research and field checking, however, have resulted in successful prediction of acid mine drainage conditions in coal and overburden materials in the central Appalachian coal fields. (Smith, et al., 1976s, pp/ 290–299; Caruccio, et al., 1977s, pp. 9–10, 30, 46). Moreover, similar work is proceeding in the west. (Hardaway, et al., 1978, pp. 7–18). Because of the severe pollution problems resulting from acid and toxic mine drainage (see Final EIS at B—III—30/31), the Office has decided that the results of these promising techniques and methods-development should be employed whenever possible, to identify potential acid and toxic-forming materials.

Moreover, the Office believes that the commenter miscontrued the significance of the lack of correlation between "sulfur content" and "acid-producing" conditions, to mean that no predictive relations have been discovered. Caruccio, *supra*, however, was able to correlate acid production to the morphology of the pyrite grain *Id.*, at 46, and the work cited by the commenter did not consider the work by Smith or the work discussed in Hardaway.

8. Several other commenters felt that there are many situations in which the information specified in proposed Section 783.14(a)(2)(iii) would be inappropriate or unproven. The Office recognizes the distinct differences in local geology, possibly inadequate predictive methods, and high

costs for conducting the tests and deleted these requirements in the final rule. The regulatory authority may, however, on a case-by-case basis, require detailed rock mechanic testing of the overburden, if the validity and utility of the method is shown for a particular area.

9. The Office does believe, however, that analyses for the clays immediately underlying the coal seams to be mined are a necessary and important tool for evaluating the adequacy of the subsidence control plan. Knowledge of the clay layer beneath the coal seam to be mined is important in order to assess the potential of the clay to absorb water and assess the resultant changes in clay plasticity. If the clay is highly plastic, then subsidence may occur due to "sag and pillar squeeze," (Hill and Bates, 1978, at pp. 17-26), and other displacement problems. (Allen, 1976, pp. 1-6; Gray, et al., 1974, pp. 1-3, U.S. Bureau of Mines, 1977c, pp. 113-127.) Horslev, 1949, at p. 171 provides for soil sampling methods, and USBM, 1977c, at pp. 113-127 provides prediction of bearing capacity and associated tests.

§ 783.15 Ground water information.

Authority for this Section is the same as for Section 779.15, and Section 516 of the Act. The basis and purpose for this Section is essentially the same as for 779.15, and the same technical literature was used. All comments addressed to this Section were the same as for Section 779.15, and the discussion and their resolution in the preamble to that Section also apply to Section 783.15. No material differences with respect to the type or scope of groundwater information required for applications for underground mining activities were identified, given the generality of the requirements.

§ 783.16 Surface water information.

(1) Authority for this Section is the same as for Section 779.16, and Section 516 of the Act. The basis and purpose for this Section is essentially the same as for Section 779.16 and the same technical literature was used. Most comments addressed to this Section were the same as for 779.16, and the discussion and their resolution in the preamble to that Section also apply to Section 783.16.

(2) Given the general level of the information required under Section 783.16, no distinct differences from surface mining activities were identified with respect to the types of surface water information needed in permit applications for underground mining activities. However, several comments were received which addressed proposed Section 783.16(a), suggesting that the regulation required additional specification of particular types of surface water bodies in the application. Because the regulation is intended to state a general, non-exhaustive requirement, the comments were not accepted. However, the final rule was modified to make it clear that all surface water bodies are to be identified.

§ 783.17 Alternative water supply information.

(1) Authority for this Section is the same as for Section 779.17 and Section 516 of the Act. The basis and purpose and technical support for Section 783.17 is essentially the same as for Section 779.17. Most comments addressed to Section 783.17 were the same as those for Section 779.17, and the discussion and resolution in the preamble to that Section also applies to Section 783.17.

(2) Given the general nature of the information required under Section 783.17, no distinct differences from surface mining activities were identified with respect to the types of information required under this Section for underground mining activities. Indeed, if anything, the effects of underground mining activities on water supply sources may be more severe. Acid and other toxic mine-drainage pollution in some regions has been greater from underground mining activities than from surface mining. H.R. Rept. No. 95-128, 95th. Cong., Inst. Sess. at 127 (1977). Subsidence from underground mining can cause major disruptions in ground and surface waters. *See* discussion in preamble to Section 816.121-816.128 and Final EIS at B—III-27/38.

(3) Although no distinct differences were identified, the Office did receive some comments directed solely to Section 783.17. Some commenters felt that the main text of proposed Section 783.17(a) should be deleted, leaving only Subparagraphs (1) and (2), because they believed the Act does not require the mine operator to identify alternative water supplies. The Office rejected this, because Section 508(a)(13) of the Act requires that a detailed description be submitted in the permit application, of the measures to be taken during the mining and reclamation process to assure the protection of quality and quantity of surface and ground water systems from adverse effects or to provide alternate sources of water where such protection of quantity cannot be assured. This provision is extended to underground mining activities under Section 516(d) of the Act.

§ 783.18 Climatological data.

This Section is substantially identical to the corresponding Section 779.18 and the reader is referred to the preamble for 779.18 for information concerning the technical basis and authority for these permit application requirements.

§ 783.19 Vegetative data.

1. Authority for this Section is found in Sections 102, 201, 501(b), 504, 508 (a)(2)(B) and (c), 508(a) (3), (4) and (5), 510(b)(2) and 516(b) (6) and (10) of the Act. This Section requires that the operator provide, when required by the regulatory authority, a map or aerial photo with existing vegetative types delineated and a narrative that describes the plant communities and certain adjacent areas. The vegetative description must contain information adequate to predict the potential for reestablishing vegetation on the disturbed area and for evaluation of vegetation important to fish and wildlife. This vegetative information will be used to determine the operator's ability to comply with 30 CFR 817.111 through 817.117.

Section 783.19(a) of the proposed regulations required that the permit application contain vegetative data for the mine plan area. This Section has been changed in Section 783.20(a) of the final regulations to require such information for the "area affected" by surface operations and facilities and for any proposed reference area. The reason for this change is that there should be no disturbance to the vegation outside the affected area.

2. Several commenters argued that requiring vegetative data of the mine plan area exceeds the authority of Section 516(b)(6) of the Act. Since the surface area disturbed by underground mines is often only a small portion of the mine plan area, the regulations have been changed to require vegetative data on only the areas affected by surface operations and facilities of a mine plan.

The Office has determined that there are no distinctions which would require different treatment for surface and underground mining insofar as the areas now covered by this requirement. Because of the similarity to comments received on Section 779.19 and to avoid unnecessary repetition, additional response to comments can be found in the preamble for Section 779.19.

§ 783.20 Fish and wildlife resources information.

The purposes and requirements of Section 783.20 are the same as those for Section 779.20 except for provision for the distinct differences between surface and underground mines. The only difference between surface and underground mines identified by commenters is the size of the surface area disturbed. In order to account for this difference, Subsection 783.20(a) does not require studies to be conducted on

the entire mine plan area unless fish, wildlife or related environmental values may reasonably be expected to be disturbed over the entire area. This requirement differs from Section 779.20(a) which requires the minimum area of study to be the mine plan area. All requirements of Section 783.20 are the same as those of Section 779.20, and preamble discussion for Section 779.20 is incorporated herein by reference. In addition to the statutory authorities listed for 779.20, Section 516 of the Act also applies to Section 783.20.

Comments on this Section have been discussed in response to similar comments received on Section 779.20. The preamble discussion supporting Section 779.20 is incorporated herein by reference. Several comments related solely to underground mining.

Commenters recommended that fish and wildlife studies be confined to the surface land affected by underground mining operations. Commenters said that there is a distinct difference between the size of the surface area disturbed by underground mines and surface mines. The commenters assert that the entire mine plan area may not be affected by underground mining and therefore studies should not be required over the entire area.

The Office agrees with the rationale of the commenters. Final Section 783.20 requires that studies be conducted in the mine plan area where surface facilities and operations are located and adjacent areas where fish, wildlife or related environmental values may be affected.

Section 783.20 further provides that the determination of land areas to be studied shall be made on a case-by-case basis by the regulatory authorities in consultation with appropriate agencies having fish, wildlife, or habitat management or protection responsibilities. The Office has not automatically limited the area of study to that of surface facilities because under certain circumstances the potential for subsidence and long term water discharges and other incidents of underground mining could adversely affect fish and wildlife. The regulatory authority should determine the likelihood of such potential and require the appropriate studies, accordingly.

§ 783.21 Soil resource description.

Authority for this Section is Sections 102, 201, 501, 507, 508, 510(b), 516(a), and 516(b) (4), (6), and (10) of the act. This Section will implement the requirements of the Act for soil resource information necessary for each application for a permit for underground mining activities.

Paragraph (a) requires the application to provide soil survey information on those portions of the underground mine plan area to be affected by surface operations and facilities. Paragraph (b) requires the submission of analysis, and test results when overburden materials are used as a supplement or substitute for topsoil.

As explained in the preamble discussion of the definition for soil survey in Section 701.5, it is intended that soils information be obtained in accordance with the procedures of the National Cooperative Soil Survey.

The information will be used by the regulatory authority to determine if the applicant can comply with the performance standards of Sections 817.21 through 817.25, 817.111 through 817.117, and 817.133 of subchapter K.

1. Commenters were concerned that the requirements of this Section were identical to the soil resource requirements for surface mining. Thus, the underground operator would be required to provide soils information on surface areas that would not be disturbed by mining and reclamation activities. Since the surface area disturbed will generally be a small fraction of the mine plan area of an underground mine, the Office elected to change the soil information requirements to the affected portions of the mine plan area, i.e., the area to be affected by surface operation and facilities. This change has been made because the excavation of underground mine workings will not likely affect soil, vegetation, and land uses, except where surface operations and facilities are involved.

2. The Office determined that there are no distinctions that would require different treatment for underground and surface mining in insofar as the areas covered by this requirement are concerned. Therefore, because of the similarity of comments received on Section 779.21, additional response to comments can be found in the preamble discussion of Section 779.21.

§ 783.23 Land use information.

This Section is substantially identical to the corresponding Section of the permit application requirements for surface mining operations, Section 779.22. The reader is referred to the Preamble to Section 779.22 for information concerning the statutory authority, technical basis and alternatives considered for this Section. In addition to the authority cited in Section 779.22, this Section is based on Section 516 of the Act. The Office considers the information necessary for post-mining land use planning and decisions to be similar enough to warrant substantially the same informational requirements for both surface and underground operations. The Section 779.22 Preamble describes the requirements for submission of land use information. Those descriptions will not be repeated here except to the extent that this Section differs from Section 779.22 or such descriptions are needed to discuss comments.

The renumbering and relettering of Section 783.23 corresponds to changes made in the organization of Section 779.22. In addition, several commenters raised issues relating to specific Sections of 783.23 which were also raised in connection with Section 779.22. These issues are resolved in the preamble to Section 779.22 and revised language has been incorporated in Section 783.23 where changes were also made in Section 779.22. These issues include: (1) The requirements of a map in Sections 779.22(a)(1) and 783.23(a)(1); (2) sources for productivity and yield data in Sections 779.22(a)(2)(ii) and 783.23(a)(2)(ii); (3) availability of information on dates of past mining under Sections 779.22(b)(4) and 783.23(b)(4); and (4) availability of information on land uses preceding mining under Sections 779.22(b)(5) and 783.23(b)(5).

Several commenters suggested that Section 783.23(a) be revised to require information only for the area affected by the surface operations of an underground mine. This suggestion has been accepted as an appropriate distinction to be made between surface and underground mining operations. Language had been added to reflect that the description of condition, capability and productivity required under Section 783.23(a) shall be made with respect to that land which will be affected by the surface operations and facilities.

Some commenters suggested that the description of the capability of the land required under Section 783.23(a)(2)(i) should be required only in instances where the post-mining use is to be different from the pre-mining land use. No change was made because the Office believes that it is essential to have this information in all cases to insure that the land is restored to conditions suitable for return to the same or an approved alternative land use.

Section 783.23(a)(2)(i) has been revised to add that the capability of the land to support a variety of uses shall be described in light of the hydrology of the area affected by surface operations and facilities. The factor of site hydrology was included in this Section's surface mining counterpart, Section 779.22, but was inadvertently omitted from Section 783.23 in the proposed regulation.

One commenter suggested that this Section also require information relating to local, State and Federal land use plans and policies. This information is necessary to enable the regulatory authority to make decisions on proposed alternative land uses, particularly the finding of compatibility

with existing land use policies and plans. Accordingly, Section 783.23(c) has been added. This Section requires that the application contain a description of existing land uses within the proposed mine plan and adjacent areas together with the land use classifications under local law, if any.

§ 783.24 Maps: General requirements.

This Section sets forth general requirements for maps which must be included in the permit application and is substantially identical to Section 779.24. In addition to the statutory authority cited in Section 779.24, authority for this Section is found in Section 516 of the Act.

As originally proposed, Section 783.24 was prefaced by a phrase which stated that the maps required "be prepared in accordance with Section 783.23 . . ." Proposed Section 783.23 set forth limitations on who must prepare and certify certain listed maps, plans and cross-Sections. The reader is referred to the preamble to Section 779.24 for discussion and disposition of the public comments received on these provisions.

Several commenters raised a number of issues related to Section 779.24 which were also raised or are equally applicable to Section 783.24. Those issues are discussed and resolved in the preamble to Section 779.24 and revised language has been incorporated in Section 783.24 where changes were also made in Section 779.24. The reader may wish to review the preamble to Section 779.24 for a full description of the public comments and revisions.

As noted above, Section 783.24 is substantially identical to Section 779.24. The preamble discussion for Section 779.24 describes in detail the requirements and basis and purpose of its 12 subSections. Those descriptions and statements are equally applicable to Section 783.24 and will not be repeated here except to the extent necessary to identify differences in the requirements or to discuss public comments.

Section 783.24(c) requires identification of all areas proposed to be affected over the estimated total life of the underground mining activities together with a description of size, sequence and timing of the mining of subareas for which additional permits are anticipated. Some commenters suggested that Section 783.24(c) be revised to delete requirements dealing with identification of size, sequence and timing of mining of subareas because there are too many variables in predicting these characteristics of an underground mining operation. This Section is required by Section 508(a)(1) of the Act. Having this information, the regulatory authority is better prepared to evaluate the potential cumulative impacts of the operation, whether the operation is surface or underground mining. No change in the regulation was made as a result of those comments.

Section 783.24(d) requires identification of the location of buildings within 1000 feet of the proposed permit area together with identification of the current use of such buildings. Several commenters suggested that this Section be revised to delete the requirement for identification of building use and to require identification of buildings within 1000 feet of the land affected by surface operations incident to an underground mine. Section 507(d)(13) of the Act is specific in requiring mapped location of all buildings within 1000 feet of the permit area. Moreover, the Act addresses the impact of underground mining on surface features, not just the impact of surface activities associated with underground mining. Information on building use is necessary to determine whether the building is an occupied dwelling under Section 522(e)(5) of the Act and implementing regulations.

Section 783.24(e) requires identification of surface and subsurface features within or passing through or over the proposed permit area. This Section has been revised to include a line which was inadvertently omitted in the proposed regulations. Some commenters suggested that this Section include a depth requirement for subsurface features. In order to be complete, this information should be provided if known. However, the Office believes that identification of depth in all cases would be unnecessarily burdensome. Therefore, no change has been made.

Section 783.24(h) requires identification of all public roads located in or within 100 feet of the proposed permit area. Some commenters suggested that this Section be revised to limit identification to roads within 100 feet of land areas affected by surface operations and facilities incident to underground mining operations. The Office believes this Section cannot be so limited since underground mining operations may have surface effects not confined to the area of surface operations and facilities (e.g., subsidence). Therefore, no change has been made.

Section 783.24(i) requires identification of the boundaries of public parks and locations of cultural or historic resources and known archeological sites within the mine plan and adjacent areas. Some commenters suggested that this Section be limited to the areas which will be affected by surface disturbance activities. This comment was rejected since underground mining operations may have adverse effects which are not confined to the area of surface operations and facilities.

Section 783.24(j) requires identification of public or private cemeteries or Indian burial grounds located in or within 1000 feet of the proposed permit area. Commenters suggested that this Section be limited to only that area affected by surface operations and facilities incident to an underground mine. However, as noted in the preceding discussions of comments, underground mining operations may have adverse effects which are not confined only to the smallest area of surface operations and facilities. This Section has not been changed as a result of these comments.

§ 783.25 Cross Sections, maps and plans.

This Section is substantially identical to its counterpart in the surface mining permit application requirements, Section 779.25. In addition to the statutory authority cited in 779.25, authority for this Section is found in Section 516 of the Act. The majority of public comments received on Section 779.25 were also applicable to and were considered in connection with Section 783.25. As a result, much of the discussion in the preamble to Section 779.25 is also applicable to Section 783.25, and revised language has been incorporated in 783.25 when changes were also made in 779.25. In addition, organizational and editorial changes which are discussed in the preamble to Section 779.25 were also made in Section 783.25. The reader is encouraged to read the preamble to Section 779.25 when reviewing Section 783.25 and its preamble.

The preamble to Section 779.25 contains a detailed description of and the basis and purpose of these mapping requirements. Those descriptions will not be repeated here except to the extent necessary to discuss public comments.

Several commenters objected to Section 783.25(c) (rider seams, overburden and underlying strata) as inappropriate for underground mining permit applications. Information on the nature of associated formations will aid in determining the potential for subsidence problems. In addition, in many cases, preparing the face of the mine involves earthmoving similar if not identical to surface mining, and the composition of these associated materials must be known by the regulatory authority. Finally, disposal of waste materials removed from the mine must be planned, and premining information on its composition is necessary to evaluate the impacts that the proposed operation will have on the surface. Therefore no change was made in the regulation.

Several commenters expressed objections to presenting information on sea-

sonal variation in flow patterns of subsurface water. (Section 783.25(f)). Commenters felt this requirement was written for surface mining and did not consider the differences between surface and underground mining. Information on fluctuation of aquifers will be essential to evaluate the effect of mining on water resources. Factors which establish the premining hydrologic regime are important and similar to those for surface mining. In addition, underground mining may impact the surface by contributing to surface water flow. Providing information on premining subsurface flow patterns will aid the regulatory authority in evaluating potential surface effects. Therefore, while some changes in this Section's language were made for purposes of clarification, no fundamental changes in the rule's requirements were made.

Several commenters objected to providing the information required in 783.25 (f), (g), (h), and (i). Commenters were concerned about providing elevation information, and thought the requirements of these subSections should be limited to those areas affected by surface activities of underground mining. The intent of the Act with respect to underground mining is to control the surface effects of underground mining. Surface effects include, but are not limited to, surface activities of the underground operations. For example, subsidence is not a surface activity of an underground operation, but is certainly a surface effect. A complete picture of the premining condition is required as baseline information against which new mining effects can be compared. The requirements of Section 783.25 (f), (g), (h), and (i) are therefore necessary to provide this baseline information and have been retained in the regulations.

§ 783.27 Prime farmland identification for underground mines.

Section 783.27 is a new provision composed of materials transferred from Sections 785.17(c) and (d) of the proposed regulations. This change has been made because prime farmland identification procedures must be followed for all areas affected by surface coal mining and reclamation operations in order to determine which lands are covered by the more stringent requirements for prime farmland. Part 783 covers general requirements for underground mining permit applications, while Part 785 applies to limited special conditions and operations discussed therein.

The preamble to Section 779.27 applies to Section 783.27. The only difference between these Sections lies in the area covered in the permit application. For surface mines, the entire mine plan area must be investigated for prime farmland; whereas for underground mines, only the area proposed to be affected by surface operations or facilities need be investigated for the presence or prime farmland. Adequate protection for other portions of affected areas in underground mining activities is provided through subsidence control under Section 784.20.

PART 784—UNDERGROUND MINING PERMIT APPLICATIONS—MINIMUM REQUIREMENTS FOR RECLAMATION AND OPERATION PLAN

INTRODUCTION

1. Part 784, corresponding to Part 780 for surface mining activities, establishes minimum standards for secretarial approval of application requirements under regulatory programs for underground mining activities operations and reclamation plans. Legal authority for Part 784 and the basis and purpose is the same as for Part 780, except to the extent that differences between underground mining activities and surface mining activities have been identified, as required by Section 516 of the Act. Authority, purpose, and basis were discussed for Part 784 at 43 FR 41707–41709 (Sept. 18, 1978). Together with the information required under Part 783, the regulatory authority will use plans obtained under Part 784 to determine if the applicant will conduct proposed underground mining activities according to the requirements of Part 817 of Subchapter K.

2. Many of the types of plans required under Part 784 do not differ materially from those covered by Part 780. Most of the comments received on 784 also did not differ from those for Part 780, and the preamble discussion to Part 780 serves to explain the disposition and resolution of those comments. However, a number of distinct differences of underground mining activities were identified for Part 784, particularly with respect to plans for blasting, protection of the hydrologic balance, postmining land uses, the handling of coal processing waste, and air quality control. These differences are specifically explained in the preambles to individual Sections of Part 784.

3. As was noted in the preamble to the proposed rules, the Office determined that the limited frequency of surface blasting involved in underground mining activities justified exclusion, on a national basis, of blasting plans under Part 784. This was further confirmed by comments received for Part 780 on blasting plans for surface mining activities, indicating that the nature of blasting is such that highly-detailed information on drill hole patterns and charge weights often cannot be developed at the permit application stage and must await the commencement of actual mining operations. Because surface blasting for underground mining activities may be conducted over a significantly longer period of time than for surface mining activities, it would be even harder to develop detailed preblasting data for a blasting plan in an underground mining activities application.

However, the Office notes that the absence of a blasting plan in the application increases the importance of Section 817.65(f). Under that Section, surface blasting in close proximity to dwellings and other facilities must receive prior approval of the regulatory authority. It will, therefore, serve as the mechanism by which the operator makes prior demonstration that blasting will comply with the Act and regulatory program, in the absence of a similar check in the permit application process under Part 784.

4. As is discussed above in the preamble to Parts 780 and 783, substantial changes were made in the final rules to narrow the scope of detailed information to be required in applications for the entire mine plan and adjacent areas. However, the Office did not accept comments asserting that all requirements of Part 784 be limited either only to the proposed permit areas or to areas affected by surface operations and facilities. For further explanation of those issues, see the preambles to Section 701.5 and Parts 779 and 783.

The scope, objectives, and responsibilities for Part 784 are similar to those of Part 780. The preamble introduction to Part 780 explains changes made in the final rules for these Sections.

§ 784.11 Operation plan: General requirements.

Statutory authority for Section 784.11 is found in Sections 102, 201, 501(b), 503, 504, 507(b), 508(a), 510(b), 515(b), and 516(b) of the Act. This Section requires that each permit application contain a description of the proposed mining operations to be conducted. This information, relating to the entire mine plan area, is necessary so that the regulatory authority can gauge the cumulative impacts of the proposed operations on the environment, land use, hydrology and fish and wildlife of that area.

Section 784.11(a) requires a narrative description of the mining methods, engineering techniques and major equipment for use in the operations, and a description of the anticipated production of the mine. Section 784.11(a) existed in the proposed regu-

lations as Section 784.12(a), "Reclamation and Operation plan: General Requirements." Section 784.11(b) requires a narrative description of the uses or planned uses of certain listed facilities, including construction, modification, maintenance and removal of such facilities. Section 784.11(b) did not exist in the proposed regulations relating to the content of reclamation and operations plans for underground mining (Part 784), but its counterpart in the surface mining application requirements was included in the proposed regulations as Section 780.11(b). In the final regulations, proposed Section 784.12 has been separated into requirements for the operation plan (Section 784.11) and the reclamation plan (Section 784.13) and language has been added to Section 784.11(b) to conform to Section 780.11(b).

As noted in the preamble for Section 780.11(b), the information required under Section 784.11(b) is necessary to insure compliance with the performance standards as follows: (b)(1) 817.45–.46, .48, .91–.93; (b)(2) 817.21–.25, .71–.74, .100–.106; (b)(3) 817.59, .150–.176, .180; (b)(4) 817.81–.89 .91–.93; (b)(5) 817.181; and (b)(6) 817.41–.57, .95.

Section 784.11 is substantially like the corresponding Section of the regulations for surface mining operations, Section 780.11. Several commenters raised issues related to specific parts of Section 780.11 which were also raised in connection with Section 784.11. These issues are discussed and resolved in the preamble to Section 780.11 and revised language has been incorporated in 784.11 where changes were also made in 780.11. These issues include: (1) objection to the requirement for tonnage information in 780.11(a) and 784.11(a); (2) addition of language in 780.11(b) and 784.11(b) regarding removal of equipment unless it is to be retained as part of the proposed post-mining land use; and (3) a suggested requirement that an applicant disturb only as much land as necessary for the conduct of mining and reclamation operations.

§ 784.12 Operation plan: Existing structures.

This is a new Section in the final regulations which set forth information to be included in the operation plan for underground mining permit applications. The statutory authority for this Section and its basis and purpose are discussed in the preamble to 30 C.F.R. 701.11(e). Comments received with respect to the regulations of existing structures and OSM responses to them are also discussed in the preamble to 30 C.F.R. 701.11(e). OSM considered whether distinct differences exist between surface and underground mines with respect to regulation of existing structures.

Although the types of existing structures may differ for surface and underground mines, OSM determined that no operational differences between surface and underground mines merited a distinction in the conceptual regulatory approach to existing structures. Therefore, the demonstrations to be made by permit applicants in permits for surface or underground mines are the same and the findings to be made by the regulatory authority with respect to existing structures are also the same for surface or underground mines.

§ 784.13 Reclamation plan: General requirements.

Authority for this Section is found in Sections 102, 201, 501, 503, 507, 515 and 516 of the Act. Section 784.13 is intended to provide information in the degree of detail necessary to enable the regulatory authority to determine whether the proposed mining and reclamation operation will be conducted in compliance with all applicable requirements of Sections 515 and 516 of the Act and the environmental performance standards of these regulations. This purpose was previously stated in a separate introductory Section numbered 784.11, but now has been moved to subSection (a) of this Section. Section 784.13(a) is intended to be a general introduction to all of the regulations following 784.13 which relate to the content of the reclamation plan. The remainder of 784.11 has been deleted because it was either repetitive of other regulations or unnecessary, and proposed Section 784.12 has been numbered 784.13. Proposed Section 784.12(a) has been moved to 784.11(a); comments on that Section are discussed in the preamble to Section 784.11. Each of the nine paragraphs under Section 784.13(b) is described in summary fashion in the preamble to Section 780.18(b), the surface mining activities counterpart of Section 784.13. Those descriptions will not be repeated here except to the extent necessary to discuss comments.

Several commenters raised issues relating to specific Sections of 784.13 which were also raised in connection with 780.18. These issues are discussed and resolved in the preamble to 780.18 and revised language has been incorporated in 784.13 where changes were also made in 780.18. These issues includes: (1) changes in language of Sections 780.18(b)(5)(ii) and (iii) and 784.13(b)(5)(ii) and (iii); (2) objection to the requirement for supporting calculations in 780.18(b)(2); and 784.13(b)(2); and (3) objection to the requirement for a description of steps to be taken to comply with other laws under Sections 780.18(b)(9) and 784.13(b)(9).

As originally proposed, a reclamation plan under this Section would have required information relating to lands within the mine plan area. Section 784.13 now requires reclamation plan information only for those lands within the permit area. This change was made since all of the reclamation activities under Section 784.13 which will be described in the plan will take place within the permit area.

A few commenters suggested that the applicant be required to demonstrate in the reclamation and operations plan that the amount of surface lands affected by the operation was the minimum necessary for the conduct of mining and reclamation. This suggestion prompted consideration of the alternative of adding a Section requiring the applicant to make such a showing.

While the regulations do not directly address the problem of efficient mine spoil movement, the rules covering the several aspects of a mining operation will give regulatory agencies authority and direction in assuring conservative spoil movement. Therefore, no additional requirements were placed in the regulations.

Several commenters objected to the requirement for a "detailed" timetable under 784.13(b)(1). It was felt that detailed timetables for 20 to 40 years into the future for an underground mine would be unrealistic. The following alternatives were therefore considered: (1) No change; (2) change "detailed" to "estimated" in 784.13(b)(1); (3) require an estimated timetable for the mine plan area and detailed timetable for the permit area. However, no change in the regulation was made since each five year phase of an underground mining operation must be separately permitted (Section 782.17). Thus, unless an exception to the five year limit is obtained under Section 786.25(a), the timetable for completion specified under 784.13(b)(1) need only cover areas affected within a five year period.

A few commenters suggested modification of the requirements in 784.13(b)(6) for a description of measures to be used to maximize the use and conservation of the coal resources as required in 817.59. These commenters suggested that the language be more consistent with the language of the Act. The operator is obligated to maximize coal recovery to the extent technologically possible and economically feasible (Section 817.59), but also to design his mine layout to minimize surface damage caused by subsidence (Sections 817.121–817.126). While not wholly adopting these comments, the Office has made changes in

784.13(b)(6) to more closely reflect the language of the Act and the requirements of 817.59.

A few commenters suggested that a plan for backfilling, soil stabilization, compacting and grading required under Section 784.13(b)(3) be filed only "where appropriate" and that maps showing final soil surface configuration be required only for "surface or access facilities of the permit area." The Office believes that a plan for mine spoil handling will always be appropriate, though its complexity may vary with the size of an underground operation. For an adequate evaluation of proposed mine spoil handling, a map showing the final configuration of the soil surface on disturbed areas should show the relationship of this surface to that of the remainder of the permit area. Therefore, no change has been made in Section 784.13(b)(3).

A few commenters suggested revising 784.13(b)(4) to clarify that the topsoil handling plan be limited to the area affected by underground mining. While not entirely adopting this comment, the Office has revised 784.13(b)(4) to clarify that the plan must be related to the underground mining performance standards for topsoil handling. These cover only the areas affected by surface operations and facilities.

A few commenters suggested that, in Section 784.13(b)(8), requirements for "appropriate cross-Sections" be deleted and that only mine openings and bore holes which enter the mine working be considered in the description of sealing measures. Since cross-Sections will be required only as appropriate, the Office has determined that the suggested change is not necessary. It is assumed that all mine openings lead to mine workings. Provision for sealing bore holes should be made whether or not holes enter mine workings. Therefore, no changes were made as a result of these comments.

Section 784.12(i) of the proposed regulations would have required a description of how the mining equipment and facilities would be removed from the mining area. Commenters suggested that this requirement is unnecessary since the performance standards already require removal of equipment. The Office agrees and has deleted this requirement. Readers are referred to the appropriate performance standard (817.132).

§ 784.14 Protection of hydrologic balance.

1. The authority for this Section is the same as for Section 780.21 and, in addition, Section 516 of the Act. In most respects, this Section is the same as Section 780.21 and, therefore, the statement of basis and purpose and technical literature relied upon at the preamble to that Section also applies to Section 784.14. Most of the comments addressed to proposed Section 784.13 (final rules as Section 784.14) were similar to those for Section 780.21, and the disposition of those comments at the preamble to Section 780.21 is also applicable for Section 784.14.

2. Some distinct differences between surface mining activities and underground mining activities were identified which warranted differences between Sections 780.21 and 784.14. First, as it was determined that restoration of approximate recharge capacity is not an appropriate performance standard for underground mining activities, Section 784.14 contains no provision to correspond to Section 780.21(b)(3).

3. The most important difference identified was the need for special provisions relating to the prevention and control of water discharges from underground mine workings to surface waters. Section 784.14(a)(4) requires that the application provide for the location of entries into underground workings to be designed to meet 30 CFR 817.50. For new mines in acidic or iron-bearing coal seams, this will require mine entry and access designs to preclude any gravity discharge from underground workings during and after the operations. See Section 516(b)(12) of the Act. For other mines, prevention of discharges by sealing or long-term treatment, if necessary to meet effluent limitations, is to be shown on the application.

The specific details of seals and downslope barriers are to be shown under Section 784.14(d). This information will be used to determine if the applicant will comply with 30 CFR 817.13–817.15, 817.50, and 817.131–817.132. Particularly important for the regulatory authority will be sufficient soils, geologic, and hydrologic data to assess whether mine entries can be reasonably expected to hold seals for the long-term period after cessation of mining, in view of historic experience with the difficulties in maintaining those seals without leakage or collapse. (See: Doyle, W. S., 1967. Mine sealing, in deep coal mining—waste disposal technology, Noyes Data Corp., Park Ridge, N.J., p. 17; H.R. Rep. No. 95–218, 95th Cong., 1st Sess., at 127 (1977); *Commonwealth* v. *Barnes and Tucker Co.*, 455 Pa 392, 319 A2d 871 (1974), *affd. after remand*, 472 Pa 115, 371 A2d 461 (1977); U.S. Environmental Protection Agency. 1973b, Processes, procedures, and methods to control pollution from mining activities, (Prepared by Skelly and Loy, Harrisburg, Pa.) p. 223; U.S. Federal Water Quality Administration, 1970. New mine sealing techniques for water pollution abatement. (Prepared by Halliburton Co., Duncan, Okla.) U.S. Department of the Interior, FWQA program No. 14010 DMO report, pp. 9–19.)

If these plans cannot establish that all drainage will be held within the underground workings, then the applicant would be required to demonstrate that any discharges to surface waters will meet both effluent limitations and water quality standards, without treatment, or to propose adequate plans for the use of necessary treatment facilities to ensure that mine drainage is discharged out of the underground working in accordance with Sections 817.41–817.42 and 817.50 of Subchapter K. (See H.R. Rep. No. 95–218, 95th Cong., 1st Sess., at 127 (1977); *Commonwealth* v. *Barnes and Tucker Co.*, 455 Pa 392, 319 A2d 871 (1974), *affd. after remand*, 472 Pa 115, 371 A2d 461 (1977).

4. Technical literature supporting the special mine sealing/drainage treatment requirements of Sections 784.14(a)(4) and (d) and 817.13–817.15, and 817.50 for underground mines is the literature cited above, and:

(a). Ciolkosz, E. J., Kardos, L. T., and Beers, W. F., 1973. Soil as a median for the renovation of acid mine drainage. The Pennsylvania State University Institute for Research on Land and Water Resources, final report on project A-027-PA for U.S. Office of Water Resources Research, 135 pp.

(b). Garrett, W. S., and Pitt, L. T. C., 1961. Design and construction of underground bulkheads and water barriers, in 7th Commonwealth Mining and Metallurgical Congress, Johannesburg, South Africa. Transactions, Vol. 3, pp. 1283–1301.

(c). Moebs, N. N., and Krickovic, Stephen, 1970. Air-sealing coal mines to reduce water pollution. U.S. Bureau of Mines Report of Investigations 7354, 33 pp.

(d). Penrose, R. G., Jr., and Holubec, Igor, 1973. Laboratory study of self-sealing limestone plugs for mine openings. (Prepared by NUS Corp. and D'Appolonia Consulting Engineers, Inc., Pittsburgh, Pa.) U.S. Environmental Protection Agency Report EPA-670/2-73-081. 217 pp. (Available from U.S. Department of Commerce, NTIS PB-228 586, 217 pp.).

(e). Robins, J. D., and Hutchins, J. C., 1975, Criteria for developing pollution abatement programs for inactive and abandoned mine sites. (Prepared by Skelly and Loy, Harrisburg, Pa.) U.S. Environmental Protection Agency Report, EPA 440/9-75-008, 461 pp., various paging. (Available from U.S. Department of Commerce, NTIS PB-258 279, 461 pp., various pagings.)

5. Due to other changes in Part 784, Section 784.13 of the proposed rules has been moved to Section 784.14 in the final rules. Editorial changes have

been made to more closely reflect the applicability of the substance of 784.14 to underground mining activities.

6. Three commenters suggested requesting data describing the maximum potential hydrostatic head to all mine seals and along the outcrop barriers which are to ensure stability under anticipated hydraulic heads developed while promoting mine inundation. After evaluation of this proposal OSM decided this language is already implied in the language of 784.14(d).

§ 784.15 Reclamation plan: Postmining land uses.

Statutory authority for this Section is found in Sections 102, 201, 501(b), 503, 504, 508(a), 515(b), and 516 of the Act. Section 784.15 sets forth the criteria for use in preparing the postmining land use analysis and plan. The analysis required by this Section should discuss and compare the information required to be submitted under other Sections of the regulations (see Section 783.23, Land use information, and Section 784.13, Reclamation plan: General requirements, for example), and result in a complete evaluation of the net impact which the proposed mining and reclamation (including establishment of the proposed postmining land use) will have upon the usefulness of the area affected.

Section 784.15 requires that each plan contain a description of the use to which the land affected by surface operations, or facilities within the permit area, will be put following reclamation. This description must include a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses and a discussion of the relationship of the proposed postmining use to existing land use plans and policies. All reclamation plans must discuss how the proposed use is to be achieved and what support activities may be needed to achieve the use (Section 784.15(a)(1)), as well as the consideration given to making the proposed underground mining activities consistent with surface owner plans and the applicable State and local land use plan and program. (Section 784.15(a)(3)). Where the premining and proposed postmining uses are different, Section 784.15(a)(2) requires discussion and analysis of all of the information and criteria which will be used by the regulatory authority in approving an alternative postmining land use under Section 817.133. Section 784.15(b) requires that the applicant submit a copy of the comments on the proposed use by the legal or equitable owner of record of the surface, and by State and local governmental units which would have to initiate, implement, approve, or authorize the proposed use. If the proposed postmining land use owner is to be different (e.g., the existing surface owner is the operator and the title is proposed to be transferred following the mining operation), a copy of comments should be submitted which reflects this change in ownership.

As originally proposed, Section 784.15 was numbered Section 784.14 and consisted of Paragraphs (a), (b), and (c). This Section has been renumbered and proposed Section 784.14(b) has been included within 784.15(a). Proposed Paragraph (c) has been renumbered Section 784.15(b). Also as originally proposed, Section 784.15(a) would have required information on and discussion of the proposed use with respect to land areas affected by surface operations or facilities, and Section 784.15(b) would have required a copy of the comments of the surface owner of the proposed permit area. Section 784.15(a) now requires a description of the proposed use with respect to the land to be affected within the proposed permit area (Section 784.15(a), introductory paragraph). Similarly, Section 784.15(b) was revised to require a copy of the comments of the surface owner of surface land areas within the proposed permit area which may be affected by surface operations or facilities. These changes were made to reflect the differences between surface and underground mining (i.e., surface effects of underground mining), and to limit the scope of the information required to the proposed permit area, the area where establishment of the postmining land use will take place.

1. Several commenters suggested that Section 784.15 should be revised to exempt surface effects of underground mines which pre-exist the effective date of the regulations. Section 784.15 is an informational requirement designed to aid the regulatory authority in judging whether the applicant will be able to comply with Section 817.133. The Office believes the suggested change is unwarranted since the Act does not authorize exceptions from reclamation plan requirements for underground mining operations. Thus, no change was made as a result of these comments.

2. Several commenters suggested that Section 784.15(a) be revised to read, "Each plan shall contain a detailed description of the proposed use of land areas affected by surface facilities of underground mines following reclamation," with the remainder of Section 784.15 deleted. The Office agrees that distinct differences do exist between underground and surface mining. (See discussions above regarding revisions in Section 784.15(a)). However, planning for postmining uses in surface and underground operations should be similar although the area affected may be considerably smaller for underground mines. Although the area affected may be small, structures of major sizes may occupy this area (e.g., coal preparation plant, wash house, maintenance buildings) and, therefore, the postmining use or demolition and removal plans must be set forth clearly. Because of this potential size difference, the requirement for a management plan where the proposed use is for range or grazingland has been deleted. All other requirements were retained because the Office believes this information is necessary to enable the regulatory authority to make decisions on proposed postmining land uses.

3. Some commenters suggested that this Section should reflect the right of the surface owner to have final authority in approving postmining land uses. As a result of these comments, the Office considered adding a requirement for surface owner approval. The Act does not permit surface owners to have a final approval or veto over postmining land uses. However, as mandated by the Act, surface owners must be given an opportunity to comment on the proposed use and those comments must be included within the permit application. (See Section 508(a)(3) of the Act; Section 784.15(b) of the regulations).

§ 784.16 Reclamation Plan: Ponds, impoundments, banks, dams, and embankments.

The authority for this Section is found in Sections 516(b)(4), 516(b)(5), 516(b)(7) of the Act, in addition to all Sections cited in the preamble discussion for Section 780.25. All public comments discussed in the portion of the preamble relating to Section 780.25 were considered, and similarly disposed of, with respect to Section 784.16, because there is no reason for a difference in the reclamation plan requirements between structures associated with surface mining or the surface effects of underground mining. The basis, purpose and analysis of issues relating to this Section can be found above in the preamble discussion of Section 780.25.

§ 784.17 Protection of public parks and historic places.

Statutory authority for this Section is found in Sections 102, 201, 501(b) 503, 504, 507(b), 508(a), 515(b), 516(b) and 522(e) of the Act. The basis and purpose of this Section are identical to those of Section 780.13, except that Section 784.17 applies to underground mining operations which have the potential of adversely affecting a public park or place included on or eligible for inclusion on the National Register of Historic places. As noted in the preamble to Section 780.13, this Section is intended to provide the regulatory au-

thority with sufficient information to accomplish the procedures of Section 761.12(f). The comment which is discussed in the preamble to Section 780.31, together with the Office's resolution of the issue raised by that comment is also applicable to this Section. The Office has received comments on 784.17 which were also considered in connection with Section 780.31. The following discussion and resolution of each of the comments is equally applicable to Section 780.31.

1. Several commenters suggested that Section 784.17 be revised to require a description of measures to "minimize or control" rather than "minimize or prevent." The Office considered and rejected this comment. It is the intent of the Act to prevent, to the maximum extent possible, any adverse impacts on public parks and historic places (Section 522(e); see also the preamble to Section 761.12(f) of the regulations).

2. Several commenters suggested that Section 784.17 be revised to exclude from its application those instances where an applicant has subsidence liability relief as evidenced by a legal severance deed of record. A recorded deed of this type may, together with other property rights, constitute a valid existing right. The determination of whether an applicant has a valid existing right is made by the regulatory authority pursuant to Section 761.12 on the basis of a complete permit application. The Office has no reasonable basis upon which to provide for detailed exemptions under 784.17 which are only resolvable on a case-by-case basis.

§ 784.18 Relocation or use of public roads.

The authority for this Section includes Section 516 of the Act, in addition to those Sections cited as authority for Section 780.33 in the preamble discussion of that Section. The reader is referred to the preamble discussion of Section 780.33 for a discussion of the basis and purposes of this Section and issues also considered in the context of this Section.

Section 784.18 provides for the information necessary for the regulatory authority to ensure that the rights of present users and nearby landowners affected are protected where there is public road relocation or mining activity within 100 feet of public roads. This Section appeared as Section 784.17 in the proposed rules published September 18, 1978.

Paragraph (a) is designed to aid the regulatory authority in determining if the proposed operation meets the requirements of Section 522(e)(4) of the Act and Section 761.11(d) of the regulations.

Paragraph (b) requires the submission of a narrative description with supporting material to establish, among other things, how the permit applicant plans to ensure the protection of the interests of the public in the construction of a new road or the relocation of an existing road in accordance with Section 761.12(d) of the regulations.

The Office received the following comments on this Section, in addition to those discussed in the preamble portion relating to 780.13:

1. Several commenters suggested deletion of this entire Section, while one commenter recommended that paragraph (b) be deleted. These changes were suggested because of the distinct differences the commenters perceived between underground and surface mining. The changes were not made, however, because the procedures identified in Section 784.18 are required to implement Section 761.112(d) of the regulations and Section 522(e)(4) of the Act, which apply equally to surface and underground mining. Although it may be rare for underground mining to require a road to be moved, it is possible (for example, to provide an adequate face up area, or to prevent material damage from subsidence during longwall mining). Another rationale given for the proposed deletion of Paragraph (b) was that the relocation of public roads is already in the hands of a public-roads agency, and the regulatory authority should not get involved. However, Section 522(e)(4) of the Act clearly contemplates that the regulatory authority must approve any relocation. OSM believes the necessary information is best gathered by the regulatory authority in the context of the permit application.

2. One commenter argued for requiring the permittee to post a substantial bond to cover damage for faulty construction of a relocated public road. This recommended language was not adopted because the bond will cover the road under Subchapter J, if the road is in the permit area and if it is outside the permit area, the necessary assurances are best structured for the individual situation by cooperation between the regulatory authority and the agency responsible for roads. Bonds are not prohibited by these rules, but are simply not required in every case.

3. Several commenters suggested that the words "government maintained" replace the word "public" in Section 784.18. These suggestions were rejected by OSM in favor of the language of the Act, Section 522(e)(4), which specifically provides for protecting the "interest of the public" in relation to relocation or use of "any public road". As defined in these rules, a "public road" is any right-of-way used for public passage, no matter who maintains it, in addition to traditional concepts of government-owned or government-maintained thoroughfares. Adoption of the narrower concept of "government maintained" would reduce the protection afforded the public-transportation network, and might lead to abuse if a locality simply were to allow an operator to agree to maintain a road the operator wanted to mine near. This would subvert the intention of Section 522(e)(4) of the Act.

§ 784.19 Underground development waste.

The authority for the this Section is Sections 102, 201, 501, 503, 507, 508, 510 and 516 of the Act. This Section establishes the permit requirements for the surface disposal of mine wastes in areas other than underground workings in accordance with Section 516(b)(4) of the Act.

Commenters suggested deletion of the cross-reference to Sections 817.121 through 817.126 because those Sections set forth the performance standards for subsidence control and do not relate to the surface disposal of underground development waste. The Office concurred with the comments and deleted these cross-references.

Cross-references to 30 CFR 817.71-817.74 was added to enable correlation between the permit requirements and the performance standards for the proper disposal of excess spoil and, in this case, disposal of underground development rock.

One commenter suggested that additional clarification was necessary to insure that readers would understand this Section only includes the surface disposal of waste. The Office has provided additional language to insure the stability of the deposited waste in accordance with Section 515(b)(4) of the Act by referencing to 30 CFR 780.35. This cross-reference should eliminate any confusion.

§ 784.20 Subsidence control plan.

Authority for this Section is found in Sections 102, 201(c), 501(b), 503(a), 405, 507(b), 508(a), 510(b), 515(b), and 516 of the Act.

Section 784.20 sets out minimum requirements for subsidence control plans in permit applications for underground mining activities.

This Section appeared as Section 784.19 in the proposed rules of September 18, 1978.

The subsidence control plan must show that the operation will be conducted in compliance with the requirements of Sections 817.121, 817.122, 817.124, and 817.126 of Subchapter K. The application must contain an analysis of whether or not there are structures or renewable resource lands which would be damaged if subsidence, planned or unplanned, should

occur. If there are such structures or lands, then the application must also contain:

(a) A description of the mining method; (b) A description of measures taken to prevent subsidence causing material damage; (c) A description of measures taken to mitigate damage; and (d) A description of measures taken to determine material damage, including monitoring proposed.

The goals of Section 784.20 are to prevent material damage to the land surface (Section 516(b) of the Act); prevent damage to other features protected by the Act; insure that operators adopt the most technologically and economically feasible measures to control subsidence (Sections 102; 501(b); 516(b)(1) of the Act); and mitigate the adverse effects of subsidence, if it occurs. To fully understand this Section, the reader should review the definition of "renewable resource lands" in Section 701.5 and the subsidence performance standards in Sections 817.121–817.126, together with their preamble discussions. Full bibliographic information for technical literature used in the preparation of this Section is found in the preamble discussion for 817.121–817.126

Section 784.20 explains the requirements necessary to determine if a subsidence control plan is required. A premining survey is described which will identify whether there are any structures or renewable resource lands in the permit area, and if they could suffer material damage from subsidence. If such structures or renewable resource lands are not present, the operator need not submit a subsidence control plan. On the other hand, if structures or renewable resource lands exist which could suffer material damage, a subsidence control plan is required under Section 784.20(a)–(d). OSM believes this will justifiably reduce the burden on the operator in those instances where material damage will not occur or where structures or renewable resource lands do not exist, while still providing adequate information to assure compliance with Section 817.124

In writing these regulations, OSM considered numerous suggested alternatives.

A suggestion was made to define "material damage." OSM believes that it is not necessary to define the term "material damage" in reference to subsidence. Instead, it is left to each regulatory authority or regulatory program to define and use the term in a manner appropriate for subsidence problems in its jurisdiction.

Some commenters suggested that the term "mining plan" be substituted for "subsidence control plan." This suggestion was rejected because the term "mining plan" does not properly describe the measures required to prevent subsidence causing material damage. Some such measures may include additional support to surface structures, actions wholly independent of coal recovery and reclamation activities.

Several commenters noted that no currently recognized standards exist for subsidence control plans. The term "standards" does not mean strict, well-defined and universally accepted requirements, such as building or fire codes. It was only intended as broad general requirements to ensure high quality design which will prevent material damage as required by Section 516(b)(1) of the Act. Adequate standards presently exist for all of the elements which make up the subsidence control plan.

As proposed on September 18, 1978, this Section would have required a plan prepared by a "certified registered professional mining engineer." Several commenters noted that certification for professional engineers varies from State to State. In the final rules, OSM has taken the position not to restrict the design of subsidence control plans to narrow specialty fields, but to allow the operator to select appropriately qualified personnel to complete these plans. Consequently, Section 784.20(a) has been rewritten to reflect this position.

Several commenters have proposed that "planned subsidence" be excepted from the requirements of a subsidence control plan. This proposal has not been adopted. Planned subsidence is produced by longwall mining and by second mining (i.e., pulling pillars) if pillars are completely extracted. In longwall mining, subsidence is almost complete by the time mining is finished. Generally, structures may be erected over most of the longwall panel within a short period after mining without fear of sudden and unexpected subsidence. In contrast, subsidence has unexpectedly occurred long periods after room and pillar mining (Myers A. R., pp. V-11, VII-2, VII-5, 1975, GAI Consultants, 1977). However, longwall and second mining cause extensive subsidence ground movement due to the occurrance of caving behind the face. Extensive damage to structures from longwall mining was seen in Europe and is described in mining literature (National Coal Board, Subsidence Engineers Handbook, p. 102, 1975, Vol. 1, p. 22, Vol. 2, p. 2, 1973). "Planned Subsidence" can be as damaging to existing structures and resources as unexpected subsidence.

The regulatory authority must know what measures will be taken to mitigate the adverse effects of subsidence, should there be any. In addition, parts of Section 516 of the Act other than Section 516(b)(1) apply to longwall and second mining independently. Thus, in longwall mining, offsite areas must be protected (Section 516(b)(7) of the Act), disturbance to hydrologic balance minimized (Section 516(b)(9) of the Act), disturbance of wildlife minimized (Section 516(b)(11) of the Act), and inhabitants of urbanized areas protected from imminent danger (516(c) of the Act). To fulfill the requirements of the Act and assure the rights of surface landowners (Section 102(b) of the Act), the regulatory authority must limit and control the damage caused by longwall mining, and a subsidence control plan is required. While OSM expects that most planned and controlled subsidence will, by definition, not involve measures of the type listed in Section 784.20(b)(2), such measures may be necessary in some areas of the mine. In accordance with the explicit mandate of Section 516(b)(1) of the Act, a difference must be drawn, in the case of true planned and controlled subsidence, between measures to prevent material damage and plans to mitigate the effects of such damage.

Section 784.20, as it appeared in the proposed regulations, has been substantially modified based both on the public comments received and on OSM review.

This Section as it appears in the final regulations focuses on measures to be taken to prevent subsidence from causing material damage. This may be accomplished in any combination of planned subsidence measures to be taken within the mine, or measures to be conducted on the surface. Within each of these categories specific measures of prevention are provided as examples and are not to be construed as either requirements or as limiting the operator from employing other technologically feasible measures. These measures are identified for the benefit of the operator and as a means for OSM to better explain specific prevention measures which may be employed. OSM believes that the modified regulations provide the operator with significantly greater flexibility in preventing subsidence damage resulting from mining.

A requirement to provide data on artificial supports and the bearing strength of coal pillars was in the proposed rules, but has been deleted in the final version. Artificial supports may in some ingtances reduce subsidence up to 50 percent (Stowing of Material, Brauner, 1970, p. 33). However, other than backfilling after mining (used by U.S. Bureau of Mines), stowing is not practiced in the U.S. and rarely in Europe (USBM #10, 1976a, pp. 8-22) because of the expense involved. Requiring the bearing strength to be calculated without also calculat-

ing the loads to be placed on the pillars adds no protection against subsidence and would put an unnecessary burden on the operator.

A comment was received suggesting the deletion of proposed Section 784.19(c)(5), which would have automatically required backfilling. Since backfilling is an established anti-subsidence measure which should be encouraged (USBM 1976a, pp. 8–22; Brauner 1973, p. 33; Cochran 1971, p. 15; Doyle 1976, p. 312; Candeub et al., 1973, p. 4.) OSM has chosen to retain "backfilling" as an alternative method of reducing the likelihood of subsidence damage. However, OSM does not believe that backfilling is the most economically and technologically feasible method in all cases, and accordingly will not require it.

Section 784.19(c) of the proposed regulations has been deleted because the kinds of subsurface geological and other data it would have required would have duplicated information required in Section 783.14. OSM anticipates that any additional information necessary will be submitted in response to Section 784.20(b).

The emphasis of Section 784.20(c) as it appears in the final rules is on mitigation measures to reduce the effects and extent of material damage resulting from subsidence. The mitigation measures a mine operator may choose to employ consist of any one or a combination of: (1) Restoration measures; (2) replacement measures; (3) operator purchase of features; or (4) operator purchase of insurance payable to the surface owner. Any one or combination of these will ensure that the operator is incompliance with 816.124, and OSM feels that the expanded scope of prevention and mitigation measures provides flexibility for the operator.

Some commenters suggested that mitigating measures to repair subsidence damage be included in the subsidence control plan. OSM felt that the inclusion of mitigation measures among those required to prevent material damage would provide appropriate protection to land owners and resources. Therefore, mitigating measures planned by the operator must now be described in the subsidence control plan.

A requirement for the operator to assume financial responsibility for subsidence damage was suggested. Insurance policies provided by the operator, such as required in Section 507(f) of the Act and constituting an alternative under Section 817.124 of the regulations, must be described in the subsidence plan, when they are used. (See the preamble discussion for Section 817.124 for a full discussion of the operator's financial responsibility).

Section 784.20(d) has been extensively modified from the proposed regulations version. Instead of requiring a subsidence monitoring plan for each permit, the regulations now require a description of measures to be taken to determine the degree of material damage in those instances where structures and/or renewable resource lands exist and may suffer material damage from subsidence. These measures include, but are not limited to, presubsidence surveys and monitoring.

Several commenters suggested that the monitoring requirements of proposed Section 784.19 should be deleted because a universal requirement to install monuments would have adverse impacts on mining costs and the environment. It was also suggested that monitoring should not be required where no danger of material damage existed, such as in mountainous, unimproved and uninhabited areas in some of the western States. OSM has seen no studies or other evidence that there are objective conditions which would assure in every case that no subsidence could occur. Accordingly, no regulation has been presented to exempt any mines from this Section entirely. However, if a premining survey of the permit area shows no structures or resources which would be damaged if subsidence were to occur, then further requirements of the subsidence control plan, including monitoring, are deleted. If, on the other hand, damage to the structures or resources would result from subsidence, monitoring or other requirements are to be adopted for their protection, as appropriate. The regulations were rewritten to allow for the adaptation of monitoring requirements to each individual mining situation and to eliminate unnecessary monitoring.

A suggestion to adopt monitoring techniques recommended by a USBM (Panek, p. 321, 1970) was rejected because many of the recommended techniques are used only for research, not commercial mining, and because OSM does not wish to be so narrow as to restrict the operator from using the latest technological advances in subsidence monitoring.

A commenter suggested that the Office require the operator to send all subsidence data to the U.S. Bureau of Mines. Subsidence monitoring requirements have been deleted, except where the survey shows structures or renewable resource lands exist, and that subsidence could cause material damage or diminution of value or foreseeable use of the land, or if the regulatory authority determines that such damage or diminution could occur. Also, USBM has not indicated to OSM that it is prepared to receive and analyze, data, much of which would be of questionable use for research purposes. OSM does not want to impose any unnecessary reporting requirements on operators, and accordingly has not adopted this suggestion.

One commenter suggested that proprietary information in permit applications should not be made available for public inspection. No change in the proposed rules was made in response to this comment. Section 786.15 of these rules protects the confidentiality of trade secrets or privileged financial information contained in permit applications in accordance with the requirements of the Act.

One commenter suggested that OSM develop guidance on subsidence control technology and procedures. OSM feels that extensive literature is available on subsidence as demonstrated in the preamble discussion of Section 817.121–817.126. In addition, the Office does not want to imply limitation on the use of new state-of-the-art technology as it is developed. While OSM may conduct or sponsor research in this area in the future, no guidance has been included in these regulations at this stage.

§ 784.21 Fish and wildlife plans.

This Section of regulations is essentially the same as Section 780.16. All authorities, descriptions of purpose, requirements, comments, recommendations, and rationale discussed in the preamble for Section 780.16 are applicable to Section 784.21 and are incorporated herein by reference. In addition to authorities listed for Section 780.16, Section 516 of the Act is also authority for Section 784.21.

The only difference between Sections 780.16 and 784.21 is in requirements for the minimum area to be covered by a fish and wildlife plan. In order to account for the distinct difference between surface and underground mining, Section 784.21 does not require a fish and wildlife plan to cover the entire mine plan area unless fish, wildlife, or related environmental values may reasonably be expected to be affected over the entire area. This recognizes the fact that much of the surface area of an underground mine plan area will not ordinarily be disturbed and, hence, impacts on fish and wildlife may be minimal. This requirement differs from Section 780.16 which requires a plan to cover all of the proposed mine plan area as a minimum.

(1). Commenters questioned appropriateness of requirements pertaining to enhancement of fish, wildlife and related environmental values in Section 784.21(a) (1) and (2).

The Office has determined that requirements for enhancement of fish, wildlife and related environmental values where practicable in Section 784.21(a)(1) and requirements of Section 784.21(a)(2), placing the burden on the applicant to establish if en-

hancement is not practicable, is in accordance with Sections 510(a), 515(b)(24), and Sections 516(b) (10) and (11) of the Act. The Office's rationale for this determination is as stated in the preamble for Section 780.16.

2. Three issues were raised by comments on Section 784.21 which were not addressed in the preamble for Section 780.16. Commenters recommended the use of best technology currently available be required only when practical.

The commenters' rationale for this recommendation is that small surface areas are disturbed in underground mining and the requirements of Section 784.11-784.15 are sufficient to assure the general habitat will be retained both during and after mining.

Plans prepared pursuant to Sections 784.11-784.15 are not specifically designed for protection of fish and wildlife; therefore, such plans in themselves are insufficient in the absence of a fish and wildlife plan prepared under Section 784.21 to meet the requirements of Sections 516(b)(1), 516(b)(10) and 515(b)(24) of the Act, Section 817.97 of the regulations, and the Endangered Species Act.

A number of commenters suggested exemptions from regulatory requirements if the area affected is small. The Office has determined that size of area affected does not necessarily equate to the degree of effects on wildlife. For detailed discussion pertaining to exemptions of small areas of disturbance, refer to the Preamble for Section 780.16 and Section 779.21.

Section 516(b)(11) of the Act requires the use of best technology currently available. The Office believes that the wording of Section 784.21 is in accordance with the intent of the Act, and has retained requirements for the applicant to state how best technology currently available will be used. However, Section 783.20 provides for studies in consultation with various agencies having expertise in fish, wildlife and habitat management and protection. From these studies, the best technology currently available will be determined on a case-by-case basis for each mine area thus fostering the most practical technology for each situation. Section 786.17(a)(2) requires similar consultation for review of plans.

(3) Other comments addressed the question of what land area should be covered by a fish and wildlife plan. Comments recommended the phrase "areas to be affected" used in the proposed rules should be changed to "surface or access facilities." The commenters assert underground mines do not disturb the entire surface of the mine plan area, and further assert such mines disturb only those areas which are used for access and in which surface facilities are located. Other commenters recommended the phrase "areas to be affected" used in the proposed rules be replaced by the phrase "that area that would affect fish and wildlife."

The Office agrees, in part, with the rationale of the commenters and has included provisions in final Section 784.21 so that less than the entire mine plan area is covered by a fish and wildlife plan, when adverse effects are not such as to warrant a plan for the entire area. Section 784.21 requires the fish and wildlife plan to cover only the portion of the mine plan area and adjacent areas in which adverse effects on fish, wildlife and related environmental values may reasonably be expected to occur. The discussion in the preamble for Section 783.20 of the regulation elaborates as to why this may be broader than just the area of surface facilities.

§ 784.22 Diversions.

Authority, basis and purpose for this Section are the same as for Section 780.29, and, in addition Section 516 of the Act. A few comments were received on this Section suggesting that it be restricted in scope to only surface operations and facilities of underground mining activities. These comments were rejected as unnecessary, because Section 784.21 only requires plans for diversions subject to Sections 817.43-817.44. Those Sections concern only water diversions resulting from disturbances of surface lands.

§ 784.23 Maps and plans.

Authority for this Section is found in Sections 102, 201(b), 501(b), 503, 504, 507 (b) and (g), 508(a), 515, and 516 of the Act. In addition to the narrative plans required by other Sections, this Section of Part 784 (presented in the proposed regulations as Section 784.22) requires that each application include described maps, plans and cross Sections. Some of these materials must be prepared by specified professionals as required by Sections 507, 515 and 516 of the Act. Accurate maps, plans and cross Sections are needed by the regulatory authority to determine whether the applicant can meet the performance standards of Part 817. The Office has made several editorial and organizational changes in this Section to make it consistent with other closely related Sections and to clarify its provisions. The introduction has been reduced to a single sentence prefacing the three paragraphs of this Section. Reference to map scales in this Section has been moved to Section 771.23(e) and comments received on that subject are discussed in the preamble to that Section.

Section 784.23(b)(3) relating to areas for which a bond or other performance guarantee will be given has been added to this Section and to the companion Section for surface mining operation (Section 780.14) This information is necessary in order for the regulatory authority to identify the initial and successive incremental areas within the permit area in cases where an applicant elects to "increment" the amount of the performance bond.

Section 784.23(a) requires map information on the underground mining activities to be conducted, and on the lands, facilities and features which will be affected or changed by the proposed operation. This information will give the regulatory authority an overview of the entire operation which will supplement the information on plans for the proposed permit area required under Section 784.23(b). Information of this nature on the proposed mine plan and adjacent areas is necessary in order to assess the cumulative impacts of the entire mining operation.

Section 784.23(b) requires identification of structures, facilities and areas which will be used or affected by the mining operation. This information is required for the proposed permit area with the following exceptions: As required by Section 508(a)(1) of the Act, identification of the land area to be affected by the proposed operation must be made with respect to the proposed mine plan area. In addition, Section 784.23(b)(11) requires profiles of the anticipated final surface configuration to be achieved for the affected areas. As defined in these regulations, the affected areas will always be within or the same as the permit area (see Section 701.5). The scope of information is potentially less for Section 784.23(b)(11) since the area disturbed or utilized in an underground mining operation may be less than that required for surface mining operation.

Section 784.23(c) did not appear in the proposed Section 784.22, but was included in the proposed Section 780.14, this Section's counterpart for surface mining operations. Section 784.23(c) requires that maps identifying certain areas and facilities be prepared by or under the direction of and certified by a qualified professional engineer or professional geologist, with assistance from experts in related fields. However, Section 784.23(c) further provides that plans for sedimentation ponds be prepared only by qualified registered engineers, and that plans for spoil disposal and underground development waste facilities be prepared only by qualified registered professional engineers. These requirements are in accordance with Sections 515 and 516 of the Act. The purpose of Section 784.23(c) is to insure high quality planning, design

and documentation of the plans required in the application.

Several commenters raised issues related to specific parts of Section 784.23 which were also raised in connection with Section 780.14. These issues were discussed and resolved in the preamble to Section 780.14 and revised language has been incorporated in Section 784.23 where changes were also made in Section 780.14. These issues include: (1) deletion of design and construction specification in Sections 780.14(b)(11) and 784.23(b)(10); and (2) addition of professional engineers in Sections 780.14(c) and 784.23(c).

A few commenters suggested that Section 784.23(a) be limited to lands to be affected throughout the duration of the underground mining permit. This comment was rejected and no change was made since Section 508(a)(1) of the Act requires identification of lands to be affected over the entire life of the proposed operation.

Some commenters suggested that the requirement in Section 784.23(b)(5) for identification of topsoil and overburden storage areas be deleted. While topsoil and spoil storage and disposal requirements may be substantially less for underground mines than for surface mines, they will nevertheless be necessary and should therefore be shown on maps. No change was made to the regulations in response to these comments.

Some commenters suggested deleting Section 784.23(b)(12) which would require location and monitoring points for water quality, fish and wildlife and subsidence monitoring. These comments suggested that this information is difficult to acquire for underground mines. In response to this comment, the Office has deleted fish and wildlife monitoring points. However, water quality and subsidence monitoring points (where applicable) located on maps are critical for compliance with Sections 817.41–.57 and 817.121–.126 of the performance standards. These requirements have been retained.

§ 784.24 Transportation facilities.

The authority, basis, and purpose of this Section are the same as for Section 780.37 and are described in the Preamble discussion of that Section. In addition to Sections of the Act cited as authority in the Preamble for Section 780.37, this Section is also authorized by Section 516 of the Act. On September 18, 1978, this Section was proposed as Section 784.23.

This Section would ensure that surface transportation facilities within the mine plan area for underground mines are constructed, reconstructed, used, and maintained in a manner which complies with Sections 817.150–817.180.

Modifications have been made in the Section numbers of referenced performance regulations in paragraphs 784.24 (b), (c), and (d), to conform with Section number changes in the final regulations.

Paragraph (a) identifies specific transportation structures for which detailed descriptions are required. OSM feels that these details are necessary for the regulatory authority and the public to adequately evaluate and enforce the permit in accordance with applicable performance regulations.

Paragraph (b) requires that a geotechnical analysis be submitted where there is a request for alternative specifications or for steep cut slopes. This analysis will provide the regulatory authority information necessary to evaluate the request and to ensure protection of the public interests concerning environmental performance standards.

The phrase ". . . for alternative specifications, . . ." has been added to paragraph (b) in conformance with changes implemented in Sections 817.150(d), 817.152(c), 817.160(d) and 817.162(c) in order not to restrict the operator unduly in the design and construction of transportation facilities. OSM feels that while allowing the operator more flexibility, the interests of the public have been maintained by requiring regulatory authority approval for alternative specifications.

Paragraph (c) requires a description of measures to be taken relative to modification of natural drainageways. These descriptions are necessary to ensure that Sections 516(b) (9), (10), and (11) of the Act and Sections 817.153, 817.163, 817.173 of the final regulations are complied with by the operator. These Sections require that natural drainageways not be altered or relocated without approval of the regulatory authority.

Paragraph (d) requires that alternative measures, which the operator intends on using, other than rock head walls, be approved by the regulatory authority. OSM feels that this is necessary in order for the operator to comply with Sections 817.153, 817.163, and 817.173 of the final regulations.

Paragraph (e) deals with the requirement for the description of transportation facilities in the entire mine plan area. The reasons for this requirement and a discussion of the reasons are given in Section 780.37 of the Preamble, and the reader is referred to that Section.

Many of the comments received regarding this Section on underground mining permit applications were similar or identical to statements submitted for surface mining permit applications (Section 780.37). The reader is referred to the Preamble discussion of Section 780.37 for OSM's disposition of the issues raised which is the same for this Section.

Several comments were received suggesting that proposed Sections 784.23 (b), (c), (d), and (e) be deleted. Proposed Section 784.23(e), relating to special requirements for embankments over 15 feet in height, was deleted for the reasons stated in the Preamble discussion of Section 780.37. OSM has determined that Sections (b), (c), and (d) are necessary in order for the regulatory authority to evaluate the proposed facility and to enforce the performance standards through the permit.

Several comments recommended requiring a narrative description for each facility. OSM has determined that specifications for a transportation facility are required in order to assess individual and/or cumulative impacts on the environment. Since the Act requires that disturbances to the environment be minimized, transportation facilities must be planned and constructed accordingly.

§ 784.25 Return of coal processing waste to abandoned underground workings.

Authority for this Section is Sections 102, 201, 501, 503, 504, 507, 508, 510, 515 and 516 of the Act.

An alternative method for alleviating potential subsidence problems and disposing of coal processing wastes is to use these materials to backfill voids in abandoned underground mines. The waste material provides lateral support to mine pillars and vertical support to the mine roof and overburden, and helps stabilize the surface. The major methods of backfilling are controlled, blind, and pumped slurrying (Whaite and Allen, 1975, pg. 5). A general discussion of these stowing techniques is found in a report by the National Academy of Sciences. (National Academy of Sciences, Underground Disposal of Coal Mine Wastes—A Report to the National Science Foundation (1975)).

Controlled flushing is used in mines in which workers can safely enter and gain access to key areas for the filling operations. A slurry of crushed coal refuse is passed into the mine through boreholes or shafts and placed by workers behind timber or other bulkheads for waste disposal and surface support purposes.

Blind flushing can be used where abandoned mine openings are inaccessible because of flooding or extensive caving. Granular material is injected into mine voids by gravity feed. Most blind flushing projects have required hundreds of holes because of the limited amount of material that can be emplaced through any one hole (Whaite and Allen, 1975, pg. 6).

A new technique for flushing of inaccessible mine workings utilizes

pumped slurry injected from the surface. (Conduh, Fleissing, and Associates, 1973, Pg. 4–9; Whaite and Allen, 1975, Pg. 6). Fly ash has also been used in subsidence stabilization (Magnuson et al., 1970, Pg. 84; Michael Baker 1973, p. 349).

Section 784.25(a) identifies the requirements for plans and procedures for the disposal of coal processing wastes in underground mines. This information is necessary for the regulatory authority to evaluate the permit and to ensure that the operator can comply with Section 817.88 of the performance standards. Paragraph (b) requires a description of the source and quality of backfill materials and anticipated impacts on active mine operations, surface areas and the occurrence of surface effects. This data and anticipated effects are necessary to evaluate the impact backfilling may have on mitigating subsidence.

Section 784.25(c) requires data on the elimination of excess water used in the backfilling operations from the fill materials and the impact this water may have on the hydrologic regime. This information is necessary for the regulatory authority to ensure compliance with Section 515(b)(10) of the Act. Paragraph (d) requires the identification of any monitoring wells in the backfill area so that the regulatory authority may determine if adequate monitoring is being planned by the operator. Paragraph (e) applies the above requirements to pneumatic backfilling except where monitoring may be exempted by the regulatory authority.

Several commenters understood the regulations to require the underground disposal of coal processing waste. This is a misinterpretation of Section 784.25 in that the purpose and intent of this Section is to control the disposal of coal processing wastes if and when an operation decides to use underground disposal methods. These comments were rejected on the basis that Section 784.25 of the final regulations does not require underground disposal methods as written.

Several commenters suggested the deletion of Sections 784.25(c), (d) and (e) on the basis that paragraphs (a) and (b) were all that were necessary since the Act does not mandate return of mine waste underground. OSM rejected these suggestions on the basis that mitigation of the environmental impacts of backfilling operations and the health and safety of both underground miners and protection of the public are mandated by the Act (Section 515(b) and 516).

One commenter suggested the use of the word "any" for "the" in Section 784.25(a). This suggestion was accepted by OSM and this Section modified accordingly.

§ 784.26 Air pollution control plan.

Section 784.26 of the final regulations establishes permit application requirements, so that the regulatory authority is provided with comprehensive and reliable information on the air quality impact of the surface operations associated with underground mining activities. This Section is intended to assure that the proposed surface coal mining operations comply with the air quality requirements of the Act.

In addition to the applicable legal authority listed in the Preamble discussion for Section 780.15 of the regulations, the Office relies upon Section 516 of the Act to support final regulations for underground mining activities.

The final regulations require that all permit applications for underground mining activities must contain an air quality monitoring program if required by the regulatory authority. Additionally, a plan for fugitive dust control must be submitted with the application as required under Section 817.95 of the final regulations.

The Preamble discussion supporting Section 780.15 is incorporated herein by reference. Comments relating to health effects of fugitive dust, modeling, monitoring, statutory authority, visibility and aesthetics have been thoroughly discussed in the Preamble to that Section.

This Section of the final regulations complements Section 817.95 and in conjunction with Sections 780.15 and 816.95, assures a uniform regulatory scheme to protect air quality during surface coal mining operations. The Section recognizes the inherent differences between surface and underground mining activities by making a monitoring program for underground mining activities discretionary, regardless of production levels. Contrary to Western surface mining, it is evident from the data that fugitive dust from surface operations associated with underground mining activities can vary widely depending upon the details of the operation. (Colorado Open Space Council, comments on Section 780.14. (1978)). Consequently, the Office has decided to allow the regulatory authority the discretion to determine the necessity for monitoring on a case-by-case basis.

This Section has, in part, been added as a result of comments questioning OSM's tentative decision in the proposed rules not to require detailed air quality plans in permit applications for underground mines because of a lack of data. According to the Colorado Open Space Council, submitted data show that underground mines can contribute significant quantities of particulate matter to the ambient air. (See also Assemblage of Data on Air Quality in Central and Southern Utah and Assessing the Impact of Coal Development on the Region on Air Quality, Aerovironment, Inc. table 4-1-11.) Similarly, commenters suggested that fugitive dust from underground mining activity would have significant impacts unless adequately controlled. After review, the Office has decided to accept these data and include Section 784.26 in the final regulations.

PART 785—REQUIREMENTS FOR PERMITS FOR SPECIAL CATEGORIES OF MINING

The preamble discussion accompanying the proposed regulations (including the introduction to this Part and a discussion of proposed Section 785.1–785.3), found on pages 41709–41710 in FEDERAL REGISTER, Vol. 43, No. 181 (September 18, 1978), is hereby incorporated by reference to provide background as to the basis and purposes of this Part.

§§ 785.1 and 785.2 Scope and objective.

The introductory Sections 785.1 and 785.2 outline the scope and objective of this Part, respectively.

Section 785.1 makes it clear that the provisions of this Part are in addition to, not instead of, other applicable permit application requirements and procedures set forth in Subchapter G. The only changes to these Sections have been made for clarification, and are non-substantive in nature.

Section 785.2 states that the objective of this Part is to ensure that the regulatory authority has the information it needs to be sure the mining operations will be conducted in compliance with the provisions of the Act, Subchapter K and applicable regulatory programs. The references to Subchapter K and applicable regulatory programs have been added since the September 18, 1978, proposed version to reflect more accurately the place of this Part in the permanent regulatory program.

The Preamble discussion to the proposed regulations discussed a proposed Section 785.3—Responsibilities. This proposed Section was deleted from the proposed and final rules, because it was deemed to be unnecessarily duplicative. Its provisions, as described at 43 FR 41710, are all contained elsewhere in the Subchapter.

§ 785.11 Anthracite mining.

The authority for this Section is found in Sections 102, 201, 501, 503, 504, 505, 509, 510, 515, 516, 529, and 701 of the Act. This Section, together with Part 820, implements the special provisions of Section 529 of the Act, and the reader is referred to the preamble discussion of Part 820 for infor-

mation relating to issues which bear on Section 785.11. This Section has not been substantially altered since the proposed regulations except for non-substantive editorial changes and a clarification of Paragraph (b)(2), to follow more closely the language of Section 529 of the Act.

One commenter noted that proposed Section 785.11(b)(2) did not clearly reference by Section or Part the exceptions of Subchapter J regarding specified bond limits and period of revegetation responsibility. Consideration was given to retaining the original reference to Subchapter J which only generally discusses the performance bonds and insurance requirements for surface mining and reclamation operations versus the adoption of language which specifically references Part 809—Bonding and Insurance Requirements for Anthracite Surface Coal Mining and Reclamation Operations. A modification has been made to refer to Part 809 because that Part discusses exemptions for anthracite surface coal mining and reclamation operations provided in Section 529(a) of the Act.

§ 785.12 Special bituminous coal mining and reclamation operations.

1. Authority for this Section includes Sections 102; 201(c); 501(b); 503(a); 504; 507(b); 508(a); 510(b); 515(b); and 527 of the Act. This Section would apply to persons engaging in "special bituminous coal mining" in Wyoming, as defined in Section 701.5 of these rules, and would implement Section 527 of the Act. Under that Section, the Secretary is authorized to issue regulations establishing special environmental protection performance standards for mines covered by that Section, in lieu of those standards otherwise applicable under Section 515 of the Act. For the permanent regulatory program, the special environmental protection performance standards for "special bituminous coal mines" are in Part 825 of these rules. To ensure that permits would be applied for and issued according to those environmental protection performance standards, the Office has adopted Section 785.12.

2. The Office emphasizes that by establishing this Section, special treatment for the mines involved is afforded only to the extent that the requirements of Subchapter G are affected by modification of the otherwise applicable environmental protection performance standards of Subchapter K under the provisions of Part 825. Therefore, all other requirements of Subchapter G would apply to the permitting of special bituminous coal mines in Wyoming, except insofar as a modification is needed to accommodate Part 825.

3. Under Section 527(b) of the Act, provision is made for the amendment of special bituminous coal mine regulations adopted by the Secretary under the Act, to account for changes in the special Wyoming regulatory program for those mines after August 3, 1977. Authority to adopt necessary additional special bituminous coal mining permits regulations is in Paragraph (d) of Section 785.12 of the final regulations.

4. Only one comment was received on Section 785.12. This comment recommended the word "mines" be changed to read "pits." This recommendation was rejected because the word "pits" was deemed potentially to be subject to too narrow interpretation. The wording adopted is quoted directly from the Act.

§ 785.13 Experimental practices mining.

This Section, implementing Section 711 of the Act, applies to all persons who wish to conduct mining operations which include experimental practices and imposes particular requirements for those experimental practices involving deviations from the environmental protection performance standards of Sections 515 and 516 of the Act, Subchapter K, and the regulatory program.

No substantive changes have been made in this Section from the version proposed on September 18, 1978. Consequently, the preamble discussion accompanying the proposed permanent regulatory program found at 43 FR 41711–41712 (September 18, 1978) is hereby incorporated by reference and sets forth the statutory authority, basis, and purposes of this Section. Several nonsubstantive changes were made for clarification or to improve the grammar or syntax.

1. Several commenters suggested that Paragraph (a) of this Section, when read in conjunction with paragraph (c), was unclear as proposed and should state that it does not apply to all experimental practices but applies only to those experimental practices which require a variance from the environmental performance standards of Subchapter K and the regulatory program. The alternatives which were considered by OSM included:

(a) requiring a permit for all experimental practices and research under this Section; and

(b) requiring additional permit information under this Section only when the environmental performance standards will be violated.

Research and investigations associated with coal mining are of a diverse nature, and direction through permit review and approval is required to ensure compliance with environmental performance standards. Too often, as conditions dictate or at the discretion of the researcher, the research objectives may change. Special permit provisions for all research would serve as a mechanism to monitor the compliance of the research with the permanent regulatory program and would provide OSM and State regulatory authorities information on new mining practices. On the other hand, a large number of mine-related research projects are undertaken every year. Not all of these projects cause or require deviation or a variance from the environmental performance standards. In some cases, additional permit requirements might discourage research and experimentation, in contradiction to the purposes of the Act, without achieving any environmental or health and safety benefits.

OSM has clarified the regulations to maintain the scheme as proposed on September 18, 1978. That scheme balances the conflicting burdens and benefits raised by these comments. All research studies and experiments must be described to the regulatory authority in the permit application, or in any proposed revision to an existing permit, for evaluation, to determine if a variance is required. The language in Sections 785.13(a) and (c) has been amended to reflect the Office's decision regarding the intent and scope for experimental practices. Detailed additional information and monitoring will only be required if the regulatory authority determines that a variance from the performance standards is necessary to the conduct of the experiment. The variance must be approved by the regulatory authority and the Director.

2. A commenter suggested that experimental practices which may be supported by government, State, or university groups should not have to comply with the detailed requirements of this Section.

OSM considered including in this Section procedures for exempting publicly sponsored experimental practices, but rejected this alternative approach.

A large variety and number of research studies, investigations, and demonstrations are conducted by various organizations each year. Many of the projects may require that certain activities be conducted which would not comply with the environmental performance standards. The deviation from the environmental protection regulations covers a broad spectrum, with respect to both severity and nature of the impact.

OSM believes that a blanket exemption based on sponsorship of the experiment might lead some operations to utilize experimental practices as a mechanism to circumvent the performance standards. Proper control must be maintained over all research related to mining activities, if environmental degradation may occur.

On the other hand, colleges and universities and governmental agencies support, technically or financially, a wide variety of research activities designed to improve or develop technologies to enable mining and engineering practices to be conducted with a minimal impact on the environment and public safety. Many of these projects are limited in scope and physical extent. Some will involve minimal noncompliance with the performance standards, and a complete permit application for each experimental practice might discourage the conduct of many experiments each year. OSM believes that there is adequate provision made in these regulations so that small research experiments of limited environmental or health and safety risk need not be subjected to complex requirements for a variance or deviation. For example, operations under 2 acres need no permits at all, and experimental practices which will comply with the environmental performance standards will not require separate approval under this Section, but need only be described in the mining and reclamation plan required under Parts 780 and 784. If an experiment is first considered after a permit has been issued, the procedures for obtaining a revision of the permit need not be burdensome, so long as a variance from the performance standards is not necessary. Any request to revise a permit because of an experimental practice which would require a variance from the performance standards must be evaluated on a request-by-request basis. OSM believes that this review is necessary to ensure that the environmental performance standards of Subchapter K are complied with during all research activities.

3. Several commenters suggested that OSM delete Section 785.13(g), which requires that all experimental practices be advertised in a local newspaper. OSM considered deleting this requirement.

The requirement for advertising experimental practice in newspaper will increase public awareness and the opportunity for public comment. The Office also believes that reduced numbers of adverse comments during the mining operation will be received, because public comment and concern will have been aired on proposed deviations from the performance standards before approval and initiation of the experimental practice.

The Office has retained the requirement in Section 785.13(g) for the advertisement of all experimental practices requiring approval. The Office believes that, in the long run, the advertisement of the experimental practice in the newspaper will be a benefit to all persons with interests in the conduct of the experiment and the operation. In many situations the general public, through awareness of approved experimental practices, will be knowledgeable of the fact that certain changes and deviations from the environmental protection performance standards of Subchapter K have been approved. Less burden will be placed upon the public, the operator, and the regulatory authority in that complaints to the regulatory authority pointing out that certain operations are not being conducted with strict adherence to environmental performance standards of the regulatory program will be less likely. In addition, the newspaper advertisement will enable full public participation in the approval process, in furtherance of that purpose of the Act contained in Section 102(i).

4. A comment was received which requested that additional language be inserted into this Section to provide explicitly for public participation in the permit review. This recommendation has been rejected as this suggestion would lead to unnecessary and redundant language. Experimental practices only provide a variance to specific performance standards in the context of permit actions approved by the regulatory authority and the Director. As such, adequate involvement and review is provided to the general public in the permit review process under Part 787.

5. Another commenter suggested that additional review requirements should be inserted whenever the regulatory authority receives information indicating that an additional review is necessary due to a violation. This recommendation was rejected because adequate provision for review is provided under the enforcement and inspection program, and the language would merely be redundant, restating the requirements in Subchapter L. The Office further believes that Section 785.13(e)(5) contains sufficient provision by which the regulatory authority and the Director can make adequate review of the progress of the experimental practice through the submission of periodic reports describing the progress and the results of the required monitoring program.

6. It was suggested by a few commenters that the regulatory authority be required to review each experimental practice on a monthly basis. This Office believes that the review, inspection, and evaluation of all experimental practices approved by a regulatory authority under this Section is essential, because each experimental practice is different in complexity, duration and intent. It is impractical for OSM to specify a required period for inspection. The appropriate frequency of inspection will depend on the nature of the experimental practice. As such, this Office believes that the regulatory authority should have the option to determine the appropriate frequency of review for each experimental practice.

7. Another commenter requested that this Section make specific reference to the provisions for inspection and enforcement in Subchapter L. This Office has rejected the suggested change as redundant. Even without explicit reference, Subchapter L applies to all operations. As with all permits, the regulatory authority can establish whatever inspection it deems necessary to evaluate compliance with the approved experimental practices permit over and above the minimum inspections required by the Act and Subchapter L. This option, coupled with Section 785.13(h)(4)(iii), has lead OSM to believe that additional language is unnecessary, redundant and potentially misleading, since it might be deemed to imply that Subchapter L does not apply to the other special mining categories covered by this Part.

§ 785.14 Mountaintop removal mining.

This Section is designed to implement Section 515(c) of the Act and applies to persons who wish to conduct mining under regulatory programs through the use of mountaintop removal mining involving a variance from the return to the approximate original contour requirements of Section 515 of the Act, Subchapter K, and the regulatory program. The preamble accompanying proposed Section 785.15, found at 43 F.R. 41712–41713 (September 18, 1978), is hereby incorporated by reference to set forth the basis and purpose of this Section and its statutory authority, and remains effective except insofar as the Section has been changed by a few modifications to the proposed language for clarification and the substantive changes discussed below. This Section should be read together with Part 824, which contains performance standards for mountaintop removal mining.

This Section has been renumbered. Although it was proposed as Section 785.15 on September 18, 1978, OSM has decided that the regulations will be clearer if the proposed Section 785.16, relating to a variance for steep slope mining, follows immediately after the steep slope mining permit provisions. Accordingly, proposed Section 785.14 (steep slopes) and proposed Section 785.15 (mountaintop removal) have been reversed in the final rules, and the mountaintop removal permit requirements are promulgated as Section 785.14.

Section 785.14(a) states that the scope of the Section and Section 785.14(b) clarifies the meaning of "mountaintop removal mining" as used in this Section.

1. One commenter requested that the language in Section 785.15(c) more closely follow the language found in Section 515(c) of the Act. The alternatives considered in response to this comment included:

(a) Adopting the language found in Section 515(c) of the Act, and which would make the regulation repeat or closely parallel the language in the Act and (b) retaining the language as written in the proposed permanent regulations, which would place additional emphasis on assuring that the intent of Congress and the Act is achieved by incorporating the Act's requirements into the context of the permit application review stage to which this Section relates.

The organization of the proposed regulations achieves the objective of alternative (b), which OSM believes fulfills the useful role these regulations must play in the permanent program, and accordingly, the proposed rules were not changed in response to this comment. While the commenter alleged that the rule as proposed would, if finally adopted, involve redundant requirements, OSM does not believe this to be the case. Section 785.15(c) is a listing of findings the regulatory authority must make. Only Paragraph (c)(4) might be deemed remotely redundant, but OSM feels it is necessary to assure that the regulatory authority focuses on the scope of the variance granted.

2. Other comments were received requesting that new language be added to clarify the review requirements when granting a variance from the requirement to return the affected land to approximate original contour at mountaintop removal operations. These comments have been accepted in part. The Office has rewritten them for Section 785.14(d) to clarify the scheduling and procedures for reviewing permits. The suggested development and insertion of additional requirements for review each time the regulatory authority receives a request for review was rejected. The Office considered that the insertion of additional language to ensure a review would be held each time information suggested or alleged that a review, revision, or revocation of a permit might be appropriate, would be unduly burdensome on the regulatory authority. The public participation and complaint requirements of Subchapter L adequately ensure inspection promptly after public reporting of a violation. In addition, mountaintop removal operations will be subject to the periodic inspections required by Subchapter L. However, Paragraph (d) has been rewritten to ensure review prior to renewal of a permit and not later than mid-term, to ensure that both lengthy and short-term operations are subject to adequate review.

Section 785.14(d) has been internally renumbered from the September 18, 1978, version to separate the concepts into separate paragraphs as follows; Paragraph (d)(1), amendment of permit terms; Paragraph (d)(2), waiver of reviews; and Paragraph (d)(3), amendment of permit terms.

A proposed Paragraph (e) has been deleted as being unnecessary. The Paragraph would have explicitly required the regulatory authority to adopt regulations to implement this Section in language similar to Section 515(c)(5) of the Act. OSM believes such a provision might be misleading or confusing. In many States, OSM believes, mountaintop removal mining is unlikely to occur, and OSM is not requiring a mountaintop removal regulatory scheme as part of such a State's program submission under Subchapter C. If a State wishes to grant a variance for mountaintop removal activities, the provisions of Section 785.14 must be met at the permit stage, so that a paragraph setting forth a requirement for regulations would be redundant, because the regulatory program could only evaluate such a submission in accordance with its own rules.

§ 785.15 Steep slope coal mining.

Authority for this Section is found in Sections 102; 201(c); 501(b); 503(a); 504; 507(b); 508(a); 510(b); 515(b)(3)(4), (10), (22) and 515(d) of the Act. This Section would apply to persons conducting mining on steep slopes, which will be subject to environmental protection performance standards in addition to those required under Sections 515(b) and 516(b) of the Act.

To ensure that the permitting of "steep slope" coal mines accounts fully for those additional environmental protection performance standards, the Office is promulgating these special permitting requirements in 785.15. Under the permanent regulatory program, the special performance standards for steep slope mines are found in Part 826 of Subchapter K. The reader should read Section 785.16 together with Part 826, its preamble discussion, and the discussion below.

This Section was proposed as Section 785.14, but in reviewing the proposed rules OSM has determined that this Section logically belongs immediately before Section 785.16 which contains a variance applicable only on steep slopes. Accordingly, in the final rules this Section has been renumbered as Section 785.15.

Paragraph (a) of this Section stipulates that all surface coal mining and reclamation operations on steep slopes must comply with the provisions of 30 CFR 826.12 and other requirements of Subchapter K unless one of three exceptions are available:

The first exception, explained in paragraph (a)(1), is explicitly provided in the first half of the proviso clause in the main text of Section 515(d) of the Act.

The second exception, for mountaintop removal mining, in Paragraph (a)(2), is similarly based on the second half of the proviso clause in the main text of Section 515(d) of the Act. Mountaintop removal mining permits are addressed separately in Section 785.14.

The third exception, which is in paragraph (a)(3) of Section 785.15, pertains to surface coal mining and reclamation operations which, although conducted on steep slopes, are allowed a variance from the requirment of restoration of the affected area to approximate the original contour under Section 515(e) of the Act. The permitting of mines, for which this last variance applies, is addressed separately in Section 785.16.

One commenter recommended that underground mining activities should be exempt specifically from the regulations of Part 826 on the grounds that adequate control of underground mines already exists in other Sections of the regulations. The Office has rejected this recommendation. An underground mine must comply with other applicable regulations of Subchapter K with respect to haul road construction and utilization, disposal of excess spoil at facing up operations, and disposal of development rock, among others. OSM has received no information which persuaded it that the environmental risks on steep slopes were so reduced for underground mines that the precautions required by Section 826.12 could be waived. Also, because the operator will want to dispose of excess material in a valley fill or other approved method off the active minesite, sufficient material may not be available at the termination of mining to return the affected area to the approximate original contour. Without the possibility of securing a variance to the requirement for restoring the affected area to approximate original contour, underground mining may be prohibited in the steep slope area. It would appear that a greater burden would be placed on the operator by exempting underground mining activities from Part 826 and the variance available under it, than by including these operations. This commenter suggested that the legislative history showed that the steep slope provisions were intended to apply only to contour (e.g. surface mines). However, the plain meaning of Sections 515(d) and 516(b)(10) of the Act lead OSM to conclude that the provisions must apply to underground

mines. While the variance in Section 515(e) of the Act might be deemed to apply only to surface mines (it applies to "surface mining of coal," not "surface coal mining"), OSM felt such an interpretation would unduly restrict underground activities.

Several comments were received stating the fact that a referencing error had been detected in proposed paragraph (b), relating to the definition of "steep slopes." While these comments were correct, the proposed paragraph had been deleted as unnecessary, since the definition of steep slopes is now found in 30 CFR 701.5.

Under paragraph (b) of the final rule, the regulatory authority will require the necessary data, in writing, to ensure that the requirements of Section 515(d) of the Act and the environmental protection standards in 30 CFR 826.12 will be met. This paragraph is a modification of the proposed Section 785.14(c). Although reference to the other requirements of Subchapter G has been deleted in the revision, this was done to avoid redundancy and for consistency only. As stated in Section 785.15(c), every surface mine permit application for steep slopes must still fulfill the requirements of Parts 778–780, and deep mining permits must comply with Parts 782–784.

Paragraph (c) of this Section requires the regulatory authority to find, in order to issue a permit, that compliance with the performance standards of Part 826 is ensured. This Section has not been substantively changed from proposed Section 785.14(d).

§ 785.16 Permits incorporating variances from approximate original contour restoration requirements.

This Section concerns permits incorporating variances from the approximate original contour in steep slope surface coal mining and reclamation operations other than mountaintop removal, and is intended to implement Section 515(e) of the Act.

The preamble accompanying the draft permanent regulatory program found on pages 41713 through 41715 in FR, Vol. 43, no. 181, September 18, 1978, is hereby incorporated by reference to set forth the statutory authority, the basis, and the purposes of this Section, except to the extent it has been modified as discussed below. Several additional modifications were made for clarification only.

The proposed version at Paragraph (a) has been amended by the addition of reference to Sections 816.101–816.106 and 817.101–817.106 to clarify that all approximate original contour requirements could be waived for a steep slope operation which met the applicable requirement.

Several commenters suggested that the variance provided in this Section be broadened, to include nonsteep slope operations or to allow variances from requirements other than restoration to approximate original contour. These comments did not result in changes in the regulations from the proposed regulations. These comments were based upon a distinction between paragraphs 515(e)(1) and 515(e)(2) of the Act, and the commenters reading of the legislative history.

In reviewing these comments, OSM considered the following five alternative schemes to implement Section 515(e) of the Act:

1. The variance from approximate original contour would be available only to mining operations, which meet all the criteria of Section 785.16 of the regulations and of Section 515(e) of the Act.

2. The variance from approximate original contour would be available only to mining operations *on steep slopes* which meet all the criteria of Section 785.16 of the regulations and of Section 515(e) of the Act.

3. The variance from approximate original contour would be available only to surface (and not underground) operations which meet all the criteria of Section 785.16 of the regulations and of Section 515(e) of the Act.

4. The variance from approximate original contour might be available for:

a. All mining operations which meet those criteria of Section 785.16 of the regulations, which are derived from Sections 515(c)(1) and (3)–(6) of the Act; and

b. Steep slope operations which meet the criteria of § 785.16 of the regulations which are derived from Section 515(e)(2)–(6) of the Act.

5. The variance might be expanded in scope to allow for non-compliance with any provisions of the Act for any mining operations which meet those criteria of Section 785.16 of the regulations which are derived from Sections 515(e)(1) and (3)–(6) of the Act, but remain restricted to variances from the approximate original contour requirements for steep slope operations which meet the criteria of Sections 785.16 of the regulations which are derived from Sections 515(e)(2)–(6) of the Act.

The second alternative was selected. OSM feels that alternative (2) most closely follows the intent of Congress as reflected in the legislative history and a fair reading of the Act. Alternative (1) appears to be at variance with the language of the Act, but has some support in the legislative history. Alternatives (3), (4) and (5) could be justified under the language of the Act, but are not supported in the legislative history. The alternatives ranked in order from most environmentally protective to least environmentally protective are (3), (2), (1), (4), and (5). The alternatives ranked in order from least expensive for industry to comply with to most expensive are (5), (4), (1), (2), and (3). Alternative (2) was the version in the proposed rules published for public comment September 18, 1978. The other four options were all suggested by the public comments.

The legislative history of this provision goes back to 1974. (See H. Rep. 93–1522, December 5, 1974, p. 77.)

In conference this variance was narrowed, so that it only applied to mountaintop removal operations where specified postmining land uses would result. (See H. Rep. 93–1522, December 5, 1974, p. 77.)

Again, in 1975 the Conference Committee reported out a bill (H.R. 25) which contained no variance from the approximate original contour requirements applicable on steep slopes. (See Rep. 94–107. May 2 (legislative day, April 21), 1975. p. 90.)

In 1976, the bill reported out of the House Committee also limited the variance to mountaintop removal operations. (H. Rep. 94–1445, August 31, 1976, p. 69.)

In 1977, the versions of the bill first reported out of Committee in both Houses contained no steep slope variance.

The predecessor language of the final variance provision of § 515(e) was first added to the bill on the floor of the Senate on May 20, 1977. The proposed amendment, offered by Sen. Ford, was the subject of a long discussion. (123 Cong. Rec. S8097–S8103, May 20, 1977). In the Conference Committee report on July 12, 1977, the language of the amendment was changed, incorporating provisions of an amendment Sen. Randolph decided not to introduce on May 20, 1977, after Senator Metcalf agreed to support the Ford Amendment (123 Cong. Rec. S8101, May 20, 1977).

On July 21, 1977, a floor debate was held in the House on the Conference Committee version of the bill. In the summary of the provisions of the version finally enacted into law, it is stated that the "variance procedure in Section 515(e) contemplates only one variance procedure for the entire subSection which is conditioned by the constraints discussed above, including the complete backfilling of all highwalls." (123 Cong. Rec. H7584, July 21, 1977.) See also the Conference Committee report (H. Rep. 95–403, July 12, 1977, p. 59) which discusses this provision in a manner which leads OSM to believe it is limited to steep slope mining. OSM's narrow interpretation of Section 515(e) is in part a result of this analysis of the legislative history.

If alternative (1) were selected, it would have to be on the basis that paragraph (e)(1) expands the limitation to steep slope mining stated in (e)(2). If so, then it might logically be read to broaden the requirements for which the variance is available, to include all requirements of the Act. This is even broader than alternative (5) and is not suggested by the legislative history.

Alternative (3) has not been adopted, since no environmental or other policy reason exists why underground mines should not be able to take advantage of the variance.

Alternative (4) requires a straining of the legislative language beyond reasonable interpretation. It would mean reading into paragraph (e)(1) the "approximate original contour" language of paragraph (e)(2), but not the limitation of that language to steep slopes, as contained in paragraph (e)(2).

Alternative (5) is a reasonable reading of the language of paragraph (e), but flies in the face of the legislative history and would mean that *any* requirement of the Act could be waived by the regulatory authority, so long as watershed control would be improved and the highwall is covered. This is an extremely broad variance which would affect all OSM regulations, from revegetation, waste dams, and impoundments, to bonding, inspections, and permit procedures. There is no basis in the legislative history for adoption of this alternative, which would undercut the Congressional intent for minimal national standards, by allowing every regulatory authority to waive any requirement of the permanent program.

No provision has been made in these regulations to broaden the variations from approximate original contour, except in mountaintop removal, to include other than steep slope operations. It should be noted, however, that under the definition of steep slopes contained in Section 701.5 of these regulations, a regulatory authority may make the steep slope provisions applicable on slopes of less than 20°.

A comment stated that to require covering the highwall provides no variance to approximate original contour requirements. The intention of the Act was not to provide loopholes by which operations might be conducted without eliminating the highwall. The variance provision permits the operator to regrade the effected area to a steeper angle than the original topography; however, the stability of the backfilled material must be assured and the highwall must be eliminated by backfilling or reduction. OSM believes that the drafters of Section 515(e)(2) meant what they wrote, when they provided that the variance would be from "approximate original contour," and not from the highwall-covering requirement, which is a separate requirement of Section 515(d)(2) of the Act.

As originally proposed, Section 785.16 included a provision requiring the regulatory authority to enact special regulations to implement this variance. This language has been deleted in the final rules because OSM believes it would be redundant. The substance of that provision is now implemented in the introductory paragraph to Section 826.15 of these rules.

A comment was received suggesting that proposed Section 785.16(b), which cross referenced the definition of steep slopes, be deleted as unnecessary. This recommendation was accepted and the Section has been deleted.

When this Section was proposed, OSM announced it was considering adopting a simplified procedure for applicants for this variance and solicited public comment on the legality and desirability of the proposal. (43 F.R. 41689, September 18, 1978) OSM received no comments on this proposal. After further reflection and analysis, OSM has been unable to justify the proposed simplified procedure. All steep slope operations must obtain mining and reclamation permits, and the permit application provisions have already been reduced to the minimum required under the Act to achieve statutory goals. In addition, OSM is concerned that this statutorily-authorized variance should not become a loophole to the contour-restoration requirements of the permanent program for operations not eligible under the strict criteria of Section 515(e) of the Act. Accordingly, no special, shortened permit procedure has been promulgated, and OSM does not expect it will approve any such alternative procedures proposed for any State program. Such an alternative is not within the "State Window" concept of Section 713.13.

§ 785.17 Permit application requirements for prime farmlands.

Section 785.17 contains the requirements for a permit application where the land to be mined is prime farmland. Authority for this Section is found in Sections 102, 201, 501(b), 503(a), 504, 507(b) (11) and (16), 508(a)(2-5, 8, 13), 510 (b) and (d), 511, 515(b)(2, 5-7, 19-20) and 516 of the Act. These provisions are intended to ensure that, once prime farmland is identified under the pre-application investigations of prime farmland requirements of Sections 779.27 or 783.27, for surface and underground mines respectively, adequate plans will be developed by permit applicants to ensure return of prime farmland to equal or higher agricultural production than before mining. This Section sets forth the information that permit applications must include if the area proposed to be mined contains prime farmland. Further discussion of the authority, basis, and purpose of Section 785.17 is found in the preamble to the proposed regulations at 43 FR 41715–41719 (September 18, 1978). Certain paragraphs of the proposed regulations received no comments and, accordingly, remain the same in the final regulations other than renumbering or minor editorial changes. They are Paragraphs (b)(2), formerly (e)(2); (b)(4), formerly (e)(3); (b)(5), formerly (e)(4); (b)(6), formerly (e)(5); and (d)(2), formerly (f)(2)(ii). The material in paragraphs (c) and (d) of the proposed regulations has been moved to Sections 779.27 and 783.27 of the final regulations; and the definition of soil survey in paragraph (b) has been moved to Section 701.5. All changes in the final versions of these Sections are discussed in their respective preambles.

Paragraph (a) sets forth the scope and range of applicability of the prime farmland permit application requirements. It implements Section 510(d) of the Act which makes special prime farmland performance standards applicable to all surface coal mining and reclamation operations on areas which are identified as prime farmlands.

In connection with Paragraph (a), OSM received many comments on the prime farmlands exemption or "grandfather clause" for permits issued prior to August 3, 1977. This exemption implements Section 510(d)(2) of the Act. As set forth in both the proposed regulations and final regulations, the grandfather clause for prime farmlands applies only to areas where mining is authorized under permits issued prior to August 3, 1977; it does not apply to new areas, not previously covered by a permit, which are included in renewals or revisions of pre-August 3, 1977, permits. New areas, where mining is not previously authorized under a prior permit, will be required to meet the prime farmlands performance standards of Part 823.

This interpretation of the grandfather clause for the permanent regulations differs from the exemption in the initial regulations as set forth in 30 CFR 716.7(a)(2). OSM believes that a different construction of this exemption for the permanent program is justified because of Congress' intent to prevent indefinite expansion of mining in prime farmland areas if operators cannot achieve compliance with the prime farmland performance standards. See, e.g., 123 Cong. Rec. H7588–7589 (daily ed., July 21, 1977, statements of Congressmen Tsongas and Udall); and *In re Surface Mining Litigation*, 452 F. Supp. 327 (D.D.C. 1978).

No commenters responded to OSM's explicit request (43 FR 41715) for data indicating that this provision of the permanent regulations will prohibit any existing operations. Thus, OSM has concluded that continued operation of ongoing mining will be assured, as Congress likewise intended. See, e.g., S. Rep. No. 95-337, 95th Cong. 1st Sess. 105 (1977); and 123 Cong. Rec. S12442 (daily ed., July 20, 1977, statements of Senators McClure and Metcalfe). Moreover, because Section 511(a)(3) of the Act requires that a new permit application must be prepared for any permit revisions which encompass an extension of the permit area, OSM believes that revisions or renewals which relate to new areas of prime farmland cannot be grandfathered from the requirements of the permanent prime farmland reclamation standards.

A number of commenters supported OSM's interpretation of the grandfather clause in the proposed regulations. They pointed out that a broader grandfather clause (a) would provide an unfair economic advantage to existing mines, (b) would allow mines to be exempt indefinitely, and (c) would be contrary to Congress' concern to restore prime farmlands to full productivity. Several commenters opposed any exemption from the permanent regulations as not authorized by the Act. Other commenters opposed even the broader exemption of the initial regulations as being too restrictive; they argued that all permit renewals or revisions should be grandfathered from the permanent program and disputed the effect of the legislative history. They claimed that pre-permit studies and surveys could not possibly be completed prior to expiration of their current permits and that the grandfather clause is not limited to the initial regulations. For the reasons explained above, OSM agrees with those commenters who opposed a broader grandfather clause and has rejected the comments that urged expansion of the grandfather clause beyond the initial regulations to cover all permit renewals or revisions during the permanent program.

Several commenters were also concerned about what types of permits would qualify for this exemption. In light of the definition of permit in Section 701(15) of the Act, OSM believes that a permit to conduct surface coal mining operations is the only type of permit that qualifies; other types of Federal, State or local permits are not sufficient to satisfy this exemption even if they were issued prior to August 3, 1977.

Numerous comments were also received on OSM's conclusion in the preamble to the proposed regulations (43 F.R. 41716) that Section 785.17 applies to underground mining activities. Many commenters argued that underground mining should be excluded from the prime farmland provisions because (a) surface effects of underground mines are small in comparison with surface mines; (b) the location of surface facilities for underground mining is strongly constrained by the geology, hydrology, geography, transportation routes, and existing surface resources and land-use patterns which may cause the most desirable mine site to be located on prime farmland; and (c) the prime farmland provisions would impose an additional constraint on the location of these surface facilities, a constraint that in many instances would be both expensive and may not provide for environmentally optional siting of surface facilities. Many other commenters supported the application of prime farmland requirements to underground mines. They pointed out the damage caused to prime farmlands from subsidence which reduces productivity, alters drainage and renders soil untillable.

OSM has decided to retain the applicability of the prime farmlands requirements to both surface and underground mines. The reasons for this decision are as follows: (a) OSM does not have authority under Section 516(d) of the Act to exempt underground mining from the requirements of Section 785.17 because the surface effects of underground mining surface operations and facilities on prime farmland can be as damaging as the effects of surface mining on prime farmland; (b) none of the commenters provided documentation of distinct differences between surface and underground mines that could require special permit application procedures to protect prime farmland from deep mining; and (c) the severe surface damage from subsidence due to underground mines, as documented by Bunrud and Osterwald, 1978, pp. 1 and 65, makes it imperative that prime farmland be protected from deep mining.

Paragraph (b) sets forth the required contents for a permit application with respect to prime farmlands, including a soil survey, the method and type of equipment to be used for soil removal, storage and replacement, moist bulk density data, location of stockpile areas, documentation concerning use of other suitable soil material, seeding or cropping plans, studies on levels of yield, current estimated yield, and restoration of soil productivity to equivalent yield. These data in the application need only be provided with respect to the area to be covered by the permit, as opposed to the entire mine plan area. This limited coverage is justified, in OSM's view, in order to avoid an unnecessary burden on the applicant. Nevertheless, all prime farmland in the mine plan area will be adequately protected by means of the pre-application procedures of Sections 779.27 and 783.27 which require investigation of the entire mine plan area to determine the location of any prime farmland areas.

Commenters expressed two concerns about the soil survey required in Paragraph (b)(1). First, they asked whether a survey could be conducted by persons or organizations other than the Soil Conservation Service (SCS). OSM did not intend to restrict the regulations in this manner. Under the final regulations, other qualified individuals, groups, or organizations could perform the survey. Second, a few commenters expressed concern that many soil surveys are over 20 years old and would not be adequate to reflect the current condition of prime farmland soils. OSM realizes that some old soil surveys would not now meet the standards of the National Cooperative Soil Survey (NCSS). Before use of these surveys can be approved, they will have to be revised or updated to the NCSS standards, so that the soil maps and descriptions accurately reflect premining soil profiles.

Several commenters proposed that information gained from a soil survey, developed in accordance with the procedures set forth in U.S.D.A. Handbooks 436 (Soil Taxonomy) and 18 (Soil Survey Manual), should be adequate to describe the soils within the permit area and that site-specific soil information is not necessary. OSM agrees that this soil survey information is sufficient and will be adequate for the purposes of the permit application. Accordingly, these publications have been incorporated by reference into the final regulations, and OSM allows for other representative descriptions to be used, if available and approved by the regulatory authority.

A commenter requested clarification in the final regulations to explain that map unit descriptions are to be prepared as part of the soil survey. Paragraph (b)(1)(ii) has been revised to require that a soil survey include map unit descriptions and a representative soil profile description. Map unit descriptions and representative soil profile descriptions are needed to determine that proposed mining operations will be conducted in compliance with the performance standards in Part 823. Soil profile descriptions will document the thickness and physical properties of all soil layers in the natural soil, and can be used for quality comparision between natural soil and reconstruction soil, or between natural soil and proposed substitute material.

One commenter suggested that soil map units for prime farmland soils should be prepared by a certified soil scientist or agronomist in order to pro-

vide a uniform standard of excellence, since only qualified individuals are certified. While this may be correct, OSM believes that the requirement of Paragraph (b)(1) of the final regulation for surveys to be prepared according to the standards of the NCSS, and in accordance with procedures set forth in U.S.D.A. Handbooks 436 (Soil Taxonomy) and 18 (Soil Survey Manual), will accomplish the same goals of uniformity and high standards. In addition, further control will be provided by the requirement for the SCS to review the map units for conformity with established standards. OSM believes that the SCS soil scientists are qualified to interpret the standards whether or not they choose to join a voluntary certification program.

Paragraph (b)(3) is a new provision which corresponds to the requirements of 30 CFR 823.14(c), concerning compaction of prime farmland soils. In response to numerous comments, the latter Section has been changed to measure compaction in terms of moist bulk density rather than permeability. The reasons for that change are discussed in the preamble for Part 823. Having made that change, however, it became necessary to make a corresponding change in Section 785.17, in order to ensure that the necessary moist bulk density data are submitted with the permit application.

Paragraph (b)(3) requires that moist bulk density measurements be taken for each soil horizon by methods described by the SCS. These measurements of moist bulk density are necessary so that soil compaction may be estimated for the soil reconstruction standards of Section 823.14(c). Soil compaction must be miminized so that the reconstructed soil will have optimal root growth potential (McCormack, 1967, p. 28, Table 3). Root growth is directly related to crop yields which are paramount in achieving prime farmland performance standards.

The methods utilized by the SCS in determining moist bulk density include specific procedures dealing with soil particle sizes and soil moisture content. These procedures are especially important in determining moist bulk density parameters on agricultural soil. Often moist bulk density tests by the construction industry relate only to compacted fill. Such compaction, of course, would be devastating to plant growth (McCormack, 1967, p. 20). The preambles to both the definition of moist bulk density in Section 701.5 and to Section 823.14(c) discuss moist bulk density further.

Some commenters suggested a change in Paragraph (b)(4) to require separate stockpiling only where necessary. This change would allow operators to store prime and nonprime soil materials in the same stockpile. OSM has not adopted this change because mixing the A horizon with the next lower horizon, the B horizon, or other materials of lesser quality than the A horizon, can result in a productivity potential far short of the level of yield which might otherwise be achieved through separate stockpiling (McCormack, 1974, p. 150.)

Other commenters suggested changes in Paragraphs (b)(7), which requires submission of available studies or data to demonstrate that any other suitable material which the applicant proposes to use in place of the A, B, or C soil horizons will achieve equivalent or higher levels of yield after mining. Deletion of the entire subSection was suggested on the basis that it duplicated Sections 816.111 and 816.116. Other changes in the language were proposed to clarify its purpose, ensure uniform results, and eliminate any confusion about its meaning. OSM has not adopted any of these changes in the belief that the regulation, as written, will provide the regulatory authority with evidence that the plan is based on the best available scientific evidence.

Paragraphs (b) (8) and (9) are new paragraphs which clarify the permit requirements needed to implement new Section 823.15, revegetation standards for prime farmlands. The reasons for adding those new Sections are set forth in the preamble to Part 823.

Several comments were received concerning the provision for consultation with the Secretary of Agriculture, now contained in Section 785.17(c) of the final regulations. This provision implements the requirement of Section 510(d)(1) of the Act, for the regulatory authority to consult with the Secretary of Agriculture before issuing a permit for mining of prime farmland. These commenters suggested that the period of this consultation should not extend beyond 60 days. They claimed that an open-ended review period makes it impossible for operators to plan and budget for their permit applications. No time limit has been imposed in the final regulations because the regulatory authority is responsible for timely consultation with the Secretary of Agriculture. Also, environmental conditions such as frozen ground would make it difficult to conform with such a short time limit.

A few commenters questioned whether the Secretary of Agriculture is required to review the soil reconstruction plan twice, on both the preapplication identification and the complete application. Any confusion in this respect should be eliminated by the transfer of the identification procedures to Sections 779.27 and 783.27. Another commenter asked for clarification of the U.S.D.A.'s role in issuing a permit for mining on prime farmlands. Under the final regulations, U.S.D.A. reviews and comments on the soil reconstruction plan, but the regulatory authority remains responsible for issuance or nonissuance of the permit to mine.

Paragraph (d) sets forth the findings which must be made by the regulatory authority before it grants a permit to mine on prime farmlands. Paragraph (d)(1) requires that the postmining land use must be prime farmland. Several commenters suggested that the Act only requires that lands be reclaimed "to a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses . . .," and that the owner of the reclaimed surface has the right to decide what are higher or better uses within the constraints of local land-use laws and zoning regulations.

OSM disagrees with this interpretation of the Act. Instead, OSM believes that, at the time the bond is released, the land must be both capable of supporting prime farmland use and must actually be in use as prime farmland. This interpretation is based on several provisions of the Act. Under Section 510(d)(1), a permit may be issued for the mining of prime farmlands only upon a finding that "the operator has the technological capability to restore such mined area, within a reasonable time to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management and can meet the soil reconstruction standards in Section 515(b)(7)."

Furthermore, Section 515(b)(7) requires that, when prime farmlands are mined, the topsoil and other soil horizons suitable for plant growth be segregated and replaced over spoil material; and Section 515(c)(2) provides that a permittee's performance bond shall not be released "until soil productivity for prime farmlands has returned to equivalent levels of yield as non-mined land of the same soil type in the surrounding area under equivalent management practices." All of these provisions are based on the assumption that prime farmland will be restored to agriculture production.

This interpretation is further confirmed by the legislative history of the Act where Congress frequently referred to the need to reclaim prime farmland for agriculture use and not allow conversion to other uses. See, e.g., 123 Cong. Rec. S8104, S8108, S8111 (daily ed. May 20, 1977); and H.R. Rep. No. 493, 95th Cong., 1st Sess. 105 (1977). Without this requirement, the provisions of the soil reconstruction standards based on plant growth, the requirement of restoration

of soil productivity, and the comparison of the yield after reclamation to the yield of surrounding nonmined prime farmland would be meaningless.

Another commenter on Paragraph (d)(1) expressed concern that ponds or haul roads left after mining prime farmland could result in a decrease in prime farmland acreage; they suggested that the regulations be revised to prevent such occurrence. OSM believes that this change is not necessary because Paragraph (d)(1) allows only prime farmland as the postmining land use. On this basis, roads and ponds are not acceptable as a postmining land use on prime farmlands where such roads and ponds were not present before mining, except that the regulatory authority may approve a final cut water body.

A number of commenters opposed the regulation contained in Paragraph (d)(3) requiring the regulatory authority to find in writing that the applicant has the technological capability to restore prime farmland. Section 510(d)(1) of the Act requires this finding. Two commenters suggested that this paragraph be reworded to require the operator to demonstrate technological capability to restore prime farmland. These comments have been rejected because OSM believes that sufficient information is required in the permit application and mining plan for the regulatory authority to determine whether the operator is technologically capable of restoring prime farmland. The regulatory authority may require, however, any additional evidence that it deems necessary to assist it in its determination of the operator's technological capability of restoring prime farmland.

Another commenter noted that there is a range in productivity among prime farmland soils and suggested that technological capability be based upon a comparison of yield restoration to similar nonmined prime farmland, rather than only to nonmined farmland in the surrounding area. OSM agrees that productivity of all prime farmland is not equal; but no change has been made in this paragraph because the final regulations in Part 823 establish the standards for restoration of productivity and it would be both duplicative and unnecessary to repeat those standards in this paragraph concerning the permit findings.

Several commenters questioned the reference to Section 515(b)(5) in the preamble to the proposed regulations (43 F.R.41715). They claimed that Section 515(b)(7) is the sole source of soil handling requirements for prime farmlands and that Section 515(b)(5) applies only to nonprime farmland areas. OSM continues to rely on Section 515(b)(5), however, because it and Sections 515(b) (2), (6), and (19) are essential authority for the full range of environmental protection performance standards to which operations on prime farmlands are subject, as provided in Section 785.17(d)(4) of the final regulations. While Section 515(b)(7) is more specific concerning the topsoil reconstruction requirements for prime farmlands, it does not entirely supplant these other requirements of the Act. As Section 810.11 of the final regulations explains, operations on prime farmlands must meet all other generally applicable performance standards, as well as the more specific standards of Part 823.

§ 785.18 Variances for delay in contemporaneous reclamation requirement combined surface and underground mining operations.

This Section has not been changed substantively from the proposed regulations (43 FR 41857-41858). The preamble accompanying the draft permanent regulatory program found at 43 F.R. 41719 (September 18, 1978) is hereby incorporated by reference and sets forth the authority, basis, and purpose of this Section. This Section applies to permit applications for combined surface and underground coal mining, where the applicant desires a variance from the requirement to reclaim the effected land as contemporaneously as practicable, so as to conduct underground mining activities. This Section authorizes operations which must comply with the standards of Parts 816, and 818, and the reader is referred to the preamble discussion for Part 818 for a discussion of issues relevant to this Section.

As proposed, this Section has a different Paragraph (c) which has been deleted because it was redundant. All subsequent proposed Paragraphs were relettered within the Section in this final version. Several references to Section 516(b) of the Act were either replaced with correct references to the appropriate implementing regulation or deleted as unnecessary.

A comment was received which proposed that a new sentence be added to Section 785.18(a) to limit the scope of the provision. The proposed language would have stated that no variance would be required from the regulatory authority in those situations where surface facilities are being constructed for an underground mining operation and the coal extracted from the site is only for such site preparation and installation.

The intent of Section 515(b)(16) of the Act and Section 785.18 and Part 818 of the permanent regulations is to allow concurrent methods of mining while protecting the environment and the health and safety of the miners. Thus, incidental coal production relative to site preparations for an underground mining activity should not necessarily be eligible for a variance, since it might not constitute "surface mining activities," in which case it would be subject to the contemporaneous reclamation requirements in Section 817.100. OSM does not feel that describing the site-preparation activities will be burdensome to the operator, and feels that any variance for "incidental" extraction would be subject to possible abuse. The commenter gave no reason why the site-preparation activities should not either be followed by prompt reclamation or receive a variance under this Section.

Accordingly, no change in the proposed regulations was made in response to this comment.

§ 785.19 Alluvial valley floors.

Introduction

785.19 contains the permit application portion of the Office's regulatory standards for insuring protection of alluvial valley floors in the arid and semiarid areas of the United States and is adopted under the authority of Sections 102, 201, 501, 503, 504, 505, 506, 507, 508, 509, 510, 515, 516, 517, 519, 522, and 701 of the Act. Section 785.19 provides minimum standards for the permitting of surface coal mining and reclamation operations in, adjacent to or under valleys holding a stream. Performance, design, and reclamation standards for the protection of alluvial valley floors are adopted at Part 822 of Subchapter K. The harm resulting to alluvial valley floor systems and their use for agriculture from surface coal mining and reclamation operations which Section 785.19 and Part 822 are designed to mitigate, are described in the Final EIS at pages BIII-34 to BIII-36. The general basis and purpose for the alluvial valley floor permitting requirements was described at 43 FR 41719-41720, 41723-41724 (Sept. 18, 1978).

(A) The Office has made a number of editorial and organizational changes in the original three Sections that treated alluvial valley floor consideration for surface coal mining and reclamation operations in the arid and semiarid areas of the United States. Two of the proposed Sections, 785.19 and 786.17, both related to permitting, have been combined in order to clearly indicate to an applicant, at the time the preapplication investigations are conducted, the criteria for permit approval or denial. Thus proposed 786.17 has been transferred to 785.19 as paragraph (e) of the final rule.

(B) The Office has determined that the proposed regulations related to alluvial valley floors were not consistent in the use of location designating terms such as "adjacent area" and "affected area" and "mine plan area." Changes have been made at the fol-

lowing places in the final regulations to ensure continuity within the regulations, and to avoid any confusion regarding the intent of the Office with respect to alluvial valley floors:

(1) 785.19(c)(1)—The reconnaissance investigation shall be conducted in the mine plan area and in the adjacent area. The addition is necessary to identify alluvial valley floors in the vicinity of the proposed operations and to determine whether the proposed operations will affect alluvial valley floors both within and outside the mine plan area.

(2) Sections 785.19(c)(1)(i); 785.19(c)(1)(ii); 785.19(c)(1)(iii); 785.19(c)(1)(iv); 785.19(c)(1)(v); 785.19(c)(1)(vi).—Mapping of lands and documentation of sub-irrigated areas and flood irrigible areas is to be accomplished, at a minimum in the mine plan area and in the adjacent area in order to cover areas that may be affected. Thus, the areas referred to in Section 785.19(c)(1) (i) through (vi) are the same as those defined in 785.19(c)(1).

Section 785.19(c)(2)—The term study area refers to the area required to be investigated by the Regulatory Authority pursuant to Section 785.19(c)(1) in order to identify possible alluvial valley floors in the mine plan area and the adjacent area, and to determine the probable extent of the adjacent area.

(3) Section 785.19(c)(2)(ii)(C)—One commenter asked that the exemptions for lands artificially sub-irrigated by ponds or reservoirs be deleted from the criteria for alluvial valley floor determinations in subparagraph Section 785.19(c)(2)(ii)(C). The Office understands that the reason for the request is that separation of natural subirrigation from artificial subirrigation in such areas is impossible. In situations where a dam backs up water and causes flooding and an associated rise in the local water table, there is often some amount of both natural and artificial subirrigation. The definition of alluvial valley floors at Section 701(1) of the Act does not distinguish between natural and artificial subirrigated areas as determinative of the existence of an alluvial valley floor. The Office has deleted the exemption, but does not intend to conclude that areas of artificial subirrigation necessarily indicate the presence of an essential hydrologic function of subirrigation. This decision is further suggested by the appearance of the adverb "naturally" modifying "subirrigated" in 510(b)(5)(A) of the Act. Congress concluded that it was necessary to distinguish natural from artificial subirrigation for purposes of determining significance. This distinction is not relevant to identifying alluvial valley floors in the first instance since it is not found in the definition in Section 701 of the Act.

(4) Section 785.19(d)(1)—The phrase "or adjacent to" has been changed to "adjacent area" to be consistent with defined terms in 701.5.

(5) Section 785.19(d)(1)(ii)—"Area" in this subparagraph refers to the affected area, since the significance to agricultural activities is not assessed in unaffected areas. In this context, affected area is understood to include, among others, areas where the water supply could be materially damaged.

(6) Section 785.19(d)(2) (iii) and (iv)—The "areas designated as alluvial valley floors" refers back to "land within the proposed permit area or adjacent area identified as an alluvial valley floors."

Section 510(b)(5) of the Act provides that exchange of private coal in alluvial valley floors for Federal coal outside alluvial valley floors are to be made under Section 206 of the Federal Land Policy and Management Act, 43 U.S.C. Section 1716.

BLM issued Organic Act Directive 78-14 on March 17, 1978, which provides that exchanges may be processed and satisfied under the regulations in 43 CFR Part 2000 and the instructions in the Directive itself.

785.19 Use of definitions—(See preamble to Section 705.5). One commenter asked the Office why alluvial valley floors were not defined the way the Clean Water Act defined "headwaters." The Office has been unable to find a definition of "headwaters," in either the Clean Water Act 33 USC Section 1251-1376 or Safe Drinking Water Act (42 USC Section 300).

(7) Section 785.19 *Impact on Mineable Reserves*

One commenter opined that from fifteen to twenty percent of western coal could be "locked out" by the proposed regulations. This estimate was based on calculations of the area of strippable coal overlain by all alluvial soils in both bottomlands and uplands at sites in the Powder River Basin. A consultant to the commenter calculated that an average of 11.2 percent of the area studied at four sites in Wyoming and Montana was covered by alluvial soils. More specifically, the percentages of alluvial valley floors using this soils classification were 5.7, 9.9, 16.1, and 19.5 of each of the four sites. The corresponding percentages of strippable coal overlain by all alluvial soils were 5.7, 8.1, 11.2, and 13.5 (average 8.7 percent). Tabulated results of other studies conducted independently by the same consultant at four mine sites (one of which overlaps one of the first four sites) using the same alluvial soil criteria showed 3.2, 5.3, 17.9, and 18.6 percent of the strippable coal resources of each site overlain by alluvial valley floors. The consultant also calculated for four additional sites, that the flood irrigation capability was 4.1, 6.0, 10.0, and 14.0 percent of the site area. The calculations were inferred by the commenter to have been based on guidance procedures proposed by the Department on August 25, 1978 (43 FR 38035).

The calculations were used to support the contention of the commenter that too large a percentage of the West would be designated as alluvial valley floors if the Office's proposed technical guidelines were used. The percentages developed by the commenters were compared to average estimates by Malde and Boyles (1976), Schmidt (1977), and Hardaway et al. (1977), under the assertion that Congress developed the alluvial valley floor provisions based on the small (3 percent) area of land reported by the three investigations cited above. However, the specific methods (soil surveys, maps, etc.) used by the commenters to develop the estimates were not shown, so it was not possible for the Office to assess the degree of similarity with the Office's proposed guideline techniques. It appears that the commenter assumed that all alluvial soils will be designated as indicators of alluvial valley floors. This is valid for identifying areas to be studied, but it is clear that neither the technical guideline nor these regulations are so indiscriminate as to identify alluvial soils as alluvial valley floors. This comment did not result in a change to the regulations for the following reasons. First, the assumption that all alluvial soils are located in areas that would be designated alluvial valley floors is incorrect. It would also be incorrect to assume that all colluvial soils do not lie in alluvial valley floors. The distinction between alluvial and colluvial soils is difficult, and the criteria used to distinguish between them have not been correlated with alluvial valley floor determinations. The Office recognizes that certain alluvial soils, as well as certain otherwise ideal soils in certain topographic locations, are not irrigable or, in site-specific circumstances, are not attractive for use for agricultural activities supported by subirrigation or flood irrigation.

Second, the commenters analysis also ignores the fact that the reconnaissance analysis by Hardaway et al. (1977) found a wide range of areas of sub-irrigated alluvial valley floors in 87 mine sites surveyed. The Office recognizes that past analysis did not utilize the investigative techniques currently used and that land boundaries were not precise. Nonetheless, the order of magnitude of the areas identified as sub-irrigated alluvial valley floors have been borne out by field surveys. For comparison with the per-

centages of alluvial valley floors calculated by the commenter, Hardaway, et al., identified a range of from 0 to 37 percent of coal mine tracts to be overlain by subirrigated alluvial valley floors—a much broader range in percentages than that offered by the commenter.

The three percent value referenced by Congress was for the entire Western United States, not only the Powder River Basin, but also valley floors in the Northern Great Plains.

Additionally, the above commenter also proposed that the Office use a national soils classification (of Class III or better soils) to desingate alluvial valley floors. As is discussed below, in response to a proposal to use a soil classification criterion as an absolute factor for identifying alluvial valley floors, such procedure ignores the requirement of the Act to compare the significance and size of the alluvial valley floor relative to the adjoining upland areas and the farm's agricultural activities.

Further, the Office did not change the regulations in response to the commenter's concern, because it did not relate the percentage of alluvial valley floors identified, using alluvial soils or soil classes, to the amount of these alluvial valley floors which might be "locked up" by the provisions of Section 510(b)(5) of the Act. First, the designation of an area as an alluvial valley floor does not preclude mining as a matter of law. Mining will only be prohibited where there is an alluvial valley floor and (1) where mining will interfere with or preclude farming; (2) where mining will materially damage the water supply to an alluvial valley floor; or (3) where the essential hydrologic functions cannot be restored after mining. Based upon experience under the initial regulatory program, the Office knows that all alluvial valley floors will not be unmineable as suggested by the commenter. Thus, the Office feels that equating the area of strippable coal "locked out" with all alluvial valley floor areas is incorrect. This determination is further borne out by the use of the term "significance" in Section 785.19(e)(2) to allow for exemptions from the general requirements of Section 510(b)(5)(A) of the Act in the approval of permits.

(8) *Preapplication Investigation.* Several commenters expressed concern that implementation of Section 785.19, in particular Paragraph (c)(1) thereof would remove the flexibility they felt had been expressed in the Technical Guidelines proposed by OSM (43 Fed. Reg., pp. 38035–45 25 August 1978) to guide pre-permit investigations on alluvial valley floors. Specific objections to 785.19(c) by other commenters alleged that it required unwarranted, expensive, and inflexible requirements to perform complex technical investigations regardless of whether alluvial valley floors existed. A few commenters requested that the regulatory authority be permitted to use discretion in requiring a field investigation. Three commenters asked that the regulations provide a framework within the Technical Guidance document for alluvial valley floors that could be mined, but that the elements of the guidelines be removed from the regulations to provide fleixibility. However, one of these commenters noted that, "No designation (of an alluvial valley floor) should be made without using the full identification process which is being developed at this time." Thus, the desire for flexibility was not always directed toward reducing the interdisciplinary analysis of natural characteristics necessary to identify alluvial valley floors and their essential hydrologic functions, but rather was directed at the apparent likelihood that each element of the investigation would have to be performed on every piece of land to be included in the mining and reclamation operation.

(9) Specifically, two commenters asked that the requirements of Section 785.19(c)(1) be replaced with a requirement to consult with the regulatory authority and then to perform a reconnaissance following the OSM Technical Guidelines. Another commenter observed that the proposed procedure was broad, complex, and costly. Another questioned the source of the authority for a Pre-application investigation.

The Office proposed Section 785.19 with the intent of (1) obtaining sufficient information for the regulatory authority to evaluate and act on determinations of alluvial valley floors and proposals to avoid disturbing or to reestablish their essential hydrologic functions; and (2) giving the applicant an early identification, if not a final determination, of whether an alluvial valley floor existed within the affected area, whether it was significant, and whether there was a potential to cause material damage to an alluvial valley floor. A report prior to submitting an application for a permit is not necessary if the applicant decides that a determination may wait until a complete application and mining plan is submitted. Thus, in Section 785.19(c)(1), the Office has modified the proposed language to give discretion to the applicant and the regulatory authority in determining when an early investigation of an alluvial valley floor is to be performed. This has been accomplished by adding a phrase which allows the investigations to be submitted either prior to submitting a full application or prior to submitting a mining plan.

(B) The Office has also accepted the recommendation of one commenter that an applicant be allowed to submit an affirmative declaration of the presence of an alluvial valley floor for consideration and action by the regulatory authority. This affirmation can be based on appropriate information.

The Office also considered adding a provision at the end of Section 785.19(c)(1) to specifically express the fact that areas which are hydrologically isolated from the proposed operations need not be investigated. Such a provision would have been based on the same hydrologic principles as would any study of hydrologic effects. The applicant is not expected to pursue effects and interactions past hydrologic barriers or beyond points of statistical insignificance. However, such a provision would have been extremely detailed and lengthy. Instead, the Office has reemphasized that the studies are to be an "appropriate combination" of activities based on "site specific conditions" (see Section 785.19(c)(1)). This reiteration is meant to provide that further studies may be curtailed if a mine's location is isolated from an alluvial valley floor.

It must be understood that if the essential hydrologic functions of an alluvial valley floor are to be preserved when the alluvial valley floor is mined, or when the alluvial valley floor is not mined, a simple affirmative declaration by the applicant based on no field data will not suffice for a complete permit application. The regulatory authority must have a basis in fact to support a written finding that the operations will be conducted to preserve the essential hydrologic functions. Thus, the declaration must have a complete identification of the essential hydrologic functions and a showing of exactly why these will not be disturbed. The requirements of Section 785.19(d) must be satisfied if land within or adjacent to the proposed permit area has an alluvial valley floor, regardless of whether the alluvial valley floor has been identified through complex field investigations or a simple affirmation.

(C) The authority for requiring this investigation when operations are proposed in the semiarid or arid areas of the United States, located west of the 100th meridian, is contained in Section 510 of the Act which requires the application for a permit to affirmatively demonstrate that the proposed operations will comply with Section 510(b)(5) of the Act, as well as with Section 515.

(D) The Office has also responded to requests for ensuring flexibility in the regulations by replacing the phrase "determined in consultation with the regulatory authority" with the phrase "required to be investigated by the

regulatory authority in consultation with the applicant." Not only does this change answer the questions as to who "determines," it also makes clear the desirability of allowing the regulatory authority, with it's familiarity with local conditions, to help focus the detailed investigation on likely areas.

(E) Other changes which respond to general comments requesting flexibility and specific requests for modified language are—

(1) The Office has deleted the word "all" as it was included in Section 785.19(c)(1)(i), since it could have been inferred to require mapping of every area covered by unconsolidated, stream laid material. It is the Office's intent to ensure that these deposits are mapped to the degree necessary to identify alluvial valley floors and not to map narrow or thin deposits which are too small or are otherwise excluded from the definition of alluvial valley floors.

(2) Several comments were received suggesting the inclusion of a negative determination procedure in paragraph 785.19(c), using determinants similar to those used for prime farmland exclusions under 30 CFR 779.27 and 783.27. As an example of "negative determinants," one commenter suggested adding phrases to subparagraphs 785.19(c)(1)(i) and (ii) to provide that areas which do not meet the geologic, hydrologic, land use, and water availability characteristics of alluvial valley floors, would be excluded from further consideration by the applicant. Another commenter recommended that the only areas meriting further study should be those that pass the test of 30 CFR 785.19(c)(1)(ii).

The Office agrees that the proposed regulation lacked clarity in the requirements for reconnaissance investigation to allow for accurate negative determinations on a consistent basis. It was the intent of the Office to allow discretion in applying the requirements to the degree necessary to identify alluvial valley floors. If, for example, the investigations conducted under subparagraph 785.19(c)(1)(ii) show no lands that are sub-irrigated, no lands that are flood irrigated, and no water available for flood irrigation, the Office would not require additional alluvial valley floor assessments on these lands. Therefore, language more clearly expressing this limitation, by requiring "an appropriate combination" of elements of the investigation, has been inserted at the end of subparagraph (c)(1). The Office has clarified the criteria for identifying alluvial valley floors in Section 785.19(c)(2), by stating that the regulatory authority shall find that an alluvial floor exists, if the criteria are present.

The Office has not found it possible to specify a sequential process for the investigation, as one commenter proposed, since to do so would: (1) incorporate the proposed Technical Guidelines (43 Fed. Reg., pp. 38035–45, August 25, 1978); and (2) oversimplify an interdisciplinary and site-specific process. Thus, the regulations do not include absolute criteria for making negative determinations.

(F)(1) Several commenters, indicated great difficulty in applying or understanding the two mile radius that was proposed in Section 785.19(c)(1) to give guidance on how far from a proposed mine site one would look for alluvial valley floors. The two mile limit was considered a reasonable indicator of how far away one would initially search for existing hydrologic or other pertinent data that would identify or eliminate alluvial valley floors.

One commenter proposed leaving the designation of areas larger than two miles to the regulatory authority. Others proposed deleting the requirement. One proposed modifying the language to read "in associated offsite areas to such a stream." One suggested the only streams examined should be perennial streams. This suggestion resulted from a typographical error in the definition of unconsolidated stream-laid deposits in Section 701.5, which in turn led to confusing language.

(2) In net effect, commenters appeared to argue for a criterion more suitable to the varying hydrologic conditions existing at specific sites. The Office has deleted the two mile radius from the regulations and inserted criteria that tailor the area of investigation to the mine plan area and the adjacent area as required by the regulatory authority since the extent of the adjacent area cannot be documented until the initial, and possibly additional, investigation is conducted. These criteria are now contained in Section 785.19(c)(1). This decision should satisfy the commenters' request for flexibility by allowing the scope of the investigation to be determined on a site specific basis.

(3) The Office has also chosen not to impose a detailed requirement for drawdown or cone-of-depression calculations at the pre-application stage of the investigation. The necessary aquifer testing to produce reliable data could be expensive, while the pre-application investigation is designed to be a lower cost investigation aimed primarily at making determinations regarding the presence of alluvial valley floors which would trigger the requirements of Section 785.19(d) and (e).

(4) One commenter's proposal that the two mile limit apply only to those streams capable of supporting significant flood irrigation and sub-irrigation farming activities was not accepted, because the requirements of Sections 510(b)(3) and 515(b)(10) of the Act require the protection of the hydrologic balance on alluvial valley floors regardless of their significance to farming. Thus, it is inappropriate to limit the identification process to "significant" alluvial valley floors. An application must identify all alluvial valley floors as defined in 701(1) of the Act. Then assessments of significance to farming in the context of 510(b)(5)(A) can be made by review under 785.19(d)–(e).

(G) A few commenters raised the issue of high costs of the pre-application survey, as well as the alleged high costs of the total study of the essential hydrologic functions. Since all commenters used the same dollar values, the Office assumed that the figures in all probability originated from one source. According to the information provided to the Office by a commenter, the cost data were developed based on a 3,840-acre mine tract. An area described by two mile radius surrounding this area was presumed by the commenters to be studied in lesser detail than was the mine plan area. Thus, a total of 26,000 acres was investigated. No additional data were provided by the commenter to support the cost figures. The commenters alleged that the analysis had taken into account the fact that hydrologic, biologic and geologic data would be required to evaluate the impact of mining on any stream, regardless of its status as an alluvial valley floor, and that the costs for an alluvial valley floor were incremental to those baseline study costs. However, no explanation of the alleged costs was provided, thereby making it impossible for the Office to check the assumptions regarding the unit cost of each step in the process, or to determine if the commenter properly distinguished between baseline investigations required for all streams, and the incremental costs attributable exclusively to alluvial valley floors. Given this lack of supporting data or explanations, the Office can give very little credibility to the base conclusions offered.

(1) The Office believes the actual cost figures for "pre-application" investigations of alluvial valley floors, will be lower than those cited by the commenters, although they will be more costly than ordinary environmental monitoring costs. If, however, the applicant proposed to mine an alluvial valley floor, it will be necessary to evaluate the essential hydrologic functions. In the case of complex hydrologic systems, the cost of groundwater wells and aquifer testing would increase the costs and might result in figures not unlike those submitted by the commenters. But, again, these costs are presently incurred by applicants in large surface mines in the

West (see for example Section 26-210(10)-S10300 *Pre-planning* in the Montana Administrative Code, Adopted Rules and Regulations Pursuant to Title 50, Chapter 10, R.C.M. 1947, which requires monitoring and surveys of vegetation, soils, hydraulics, water quantity and quality and others), and would likely be incurred in great part, to show compliance with the requirements of Sections 507(b)(1), 510(b)(3), and 515 of the Act under any circumstances. Further, if one of the criteria for identifying alluvial valley floors is not present, it may not be necessary to proceed with other parts of the investigation. The Office has made this clear by specifying that "an appropriate combination" of the study elements adapted to site specific conditions be used, Section 785.19(c)(1).

(H)(1) Several comments were made on proposed SubSections 785.19(c)(1)(iv) and (v), which required one-year's groundwater and surface water data. Commenters noted that this requirement would require twelve months of study just to determine whether there may be an alluvial valley floor. In view of the modifications made to make the pre-application investigation more flexible and less time consuming, the Office has changed the subSections to specify that only representative onsite data must be submitted at the pre-application phase. These data should represent, at a minimum, the most favorable groundwater and surface water characteristics for agricultural activities. If such data are representative of those conditions, then they would be acceptable for use in the determinations required by Section 789.19(c).

Otherwise, the request for a preliminary final negative determination cannot be made. The language of Section 785.19(c)(2)(ii) and (iv) has been modified to ensure that seasonal variations are described by the data, since the one year of data collection has been deleted from the pre-application investigation.

(2) One commenter asked that soil test pits be included under subparagraph 785.19(c)(1)(iv). The use of these pits for soil moisture measurements, stratigraphic descriptions, vegetation root measurements, and soils analyses is already allowed within the proposed language. Thus, no changes have been made. The phrase "appropriate combination" added to Section 785.19(c)(1) also allows site specific design of a measurement scheme using pits, soil auger samples, cores, neutron probe and access tubes, or whatever procedures are suitable for the site.

(3) One commenter recommended collection of data at two periods: one in the fall and one in the summer. While such data could define the range of natural fluctuations, the "weighted averages" and characteristics during periods of moisture stress and high plant demand might not be adequately assessed with only Fall/Summer measurements. In the Handbook of Applied Hydrology, 1964 (Ven Te Chow, Editor-In-Chief, McGraw Hill Book Co.), figure 24-1d on page 24-6 shows that most of the arid and semiarid areas of the United States have predominantly winter precipitation with the greatest amount of runoff occuring then and in the spring during snowmelt.

One commenter suggested that the inclusion of the aerial imagery in Subparagraph 785.19(c)(1)(vi) as an element of the preapplication investigation was redundant in view of the requirements of preceding subparagraphs for hydrologic, land use, vegetation, and other data. Thus it was recommended by the commenter that the aerial imagery be deleted. The Office believes the applicant is given flexibility to eliminate this information if not required for a determination. The Office has also determined that aerial imagery is an extremely useful tool,[1] in identifying the general areas of subirrigation, areas of present or historic flood irrigation, location of terraces, grazings, diversion structures, and related land use factors. Thus, no change in the proposed version of the regulations was made.

(2) Commenters observed that the sentence in proposed Section 785.19(c)(1), that the Secretary could choose to publish results of alluvial valley floors mapping was unacceptable or, at best, that it should be agreed to by the State regulatory authority. The principal concern expressed was that the Secretary would publish studies and unilaterally designate alluvial valley floors using outdated, incorrect, or inflexible methods and do so without following rulemaking procedures. While it was the intent of the Office only to note that such studies could be performed in the future, and not to incorporate automatically studies without following appropriate procedures, the sentence has been deleted from the final regulations.

(3) Section 785.19(c)(1)(vii) Commenters addressed the proposed requirement for maps of farms contained in Subparagraph 781.19(c)(1)(vii). One comment indicated that the only time such a map was needed was when an alluvial valley floor existed in the permit area. The specific requirement for a map is necessary principally when an alluvial valley floor exists. This is why the proposed requirement was introduced in terms of "farms that could be affected." If the farm could not be affected, this requirement for a map disappears as does the rest of the subparagraph's requirements.

The Office does not intend to require analysis of alluvial valley floors that will not be affected, provided an adequate showing is made that there will be no adverse effects. To further clarify that the need for a map occurs principally when an alluvial valley floor has been identified as within an adjacent area, the requirement has been moved to the subparagraph 785.19(d)(2)(vi) in the final rules, thereby renumbering proposed subparagraph (d)(vi) to subparagraph (d)(vii).

(A) Subsection 785.19(e) *Criteria*, which was proposed at 786.17, establishes the criteria by which an application for surface coal mining and reclamation operation on, adjacent to or under an alluvial valley, in the Arid and Semiarid areas of the United States will be approved or disapproved. The criteria are listed in Sections 785.19(e)(1) (i)-(iv). Definitions relevant to the administration of those criteria are adopted at 785.19(e) (2)-(4). A wide range of comments were received on the proposed regulation.

(1) One commenter recommended that the protection of farming at 785.19(e)(1), be expanded to include protection of undeveloped rangeland which had the potential to be significant to farming. In other words, the commenter asked that the potential of undeveloped rangeland that could be significant to a farm's agricultural production be protected in the context of Section 510(b)(5)(A) of the Act. The same addition was recommended for Subparagraph 822.12(a)(1) of the performance standards Section, where operations are directed to be conducted so as not to interrupt, discontinue, or preclude farming on alluvial valley floors located within the affected areas.

The Office has not modified the regulations, because it will be very difficult to routinely evaluate the potential significance of undeveloped rangeland. To do so, a particular alluvial valley floor's agricultural potential would have to be compared to a hypothetical "farm's" production. However, it is noted that potentially significant undeveloped rangelands located in mined alluvial valley floors will be pro-

[1] The Office considers color infrared imagery to be of value in reconnaissance analyses of alluvial valley floors. Attention is called to the following quotation from the legislative history (Congressional Record-House, April 29, 1977, p. 3813):

"Mr. Roncalio. I regret very much that in the years we have been working on this complex matter we could not have been taking ultrahigh-elevation photos with infrared shots of the alluvial valley floors, and made precise definitions that mandated certain Sections and townships as barred, and certain Sections and townships could be mined. That would have been an appropriate way to write this law."

tected under the provisions of 822.11 which requires reestablishment of essential hydrologic functions of alluvial valley floors. These provisions provide adequate protection for rangeland. Thus, it is unnecessary to adopt the commenters suggestion.

(2) Some commenters have made recommendations relating to the proposed language of Section 786.17(c) (now 785.19(c)(2)) as that subparagraph described the phrase "significance . . . on farming." The Office has determined that the test of significance would be applied to all alluvial valley floors, regardless of whether they are currently undeveloped rangelands or not. The option of prohibiting mining on all alluvial valley floors except those that are undeveloped rangeland was rejected, because it would not take into account the "small acreage . . . negligible impact" phrase of Section 510(b)(5)(A) of the Act. The intent of the Congress to include grazing of domestic animals and ranching in the agricultural activities conducted in alluvial valley floors is evident in the House Committee Report (H. Report 95-218 95th Cong., 1st Sess.)

An option of reiterating the two potential exclusions of Section 510(b)(5)(A) (e.g. (1) undeveloped rangelands which are not significant to farming on said alluvial valley floors and (2) areas of such small acreage as to be of negligible impact on the farm's agricultural production), was felt to be unduly complex particularly if a viable alternative could be identified. The alternative was to use the term "significance to (or on) farming" to represent both exclusions, that is, the undeveloped rangeland and the small acreage exclusions. The Office, therefore, interprets the small acreage determination to be a determination of significance to a farm's agricultural production.

(3) Commenters asked that significance be related, variously, to one farm, to a particular crop, to the nation, or to another base. The comparison to determine significance must be site-specific as is evidenced by legislative history (Cong. Rec. May 19, 1977, S-8039), and as discussed in the preamble to Section 785.19(c). The Office modified the measure of significance, so that it can be judged on whether removal of the area from production would decrease the expected annual income from agricultural activities normally conducted at the farm. Many comments related to the proposal to use a value of 10 percent, or more stringent criteria established by the regulatory authority, to define the area of a farm that would, if affected, be "significant" in terms of being included under Section 510(b)(5)(A) of the Act. See (Section 785.19(e)(2) proposed Section 786.17(c)).

Commenters suggested that the 10 percent value be used to measure changes in vegetation yields, rather than changes in area. This, according to commenters, would return the protection of alluvial valley floors to a more appropriate emphasis as contained in the pre-proposed version of the regulation. The Office considered this option, but did not specifically propose it, because the effect of mining and reclamation on vegetation yields is difficult to predict from a typical mine plan, while the actual land area affected is easier to identify. In somewhat the same context, commenters suggested that the percentage (10 percent) should be applied to the specific alluvial valley floor affected by the operation wherever that crop occurs on the farm. Thus, if 150 acres of alfalfa were proposed to be mined in an alluvial valley floor, the significance of the impact would, it is presumed, be compared to the rest of the area of the alluvial valley floor not mined within that farm. Another commenter proposed that the 10 percent value be applied to the area of the farm as a whole, and perhaps be weighted according to the relative value of the various crops grown on the farm. In this way, the indicator would reflect variations in crop productivity, utility, and value. Thus, a small acreage of a valuable crop would rank relatively high in comparison to a low value crop covering a large area.

A few commenters asked that grazing forage or animal unit months be used to measure the significance of a proposed operation. This was not accepted since the significance determination is applied also to other agricultural activities of small acreages but of potentially high significance.

Some commenters recommended deleting the 10 percent value, since it was too restrictive. One commenter recommended that the value could be inappropriately restrictive. Another, in restating a different aspect of Section 785.19(e)(1), accepted the 10 percent value. Three commenters thought the 10 percent value should be replaced by an economic indicator, based on a "prudent man test." That is, the area would be significant if a reasonable or prudent man would expend money to farm and in turn, realize an economic gain. One commenter suggested the 10 percent value be related to the farm's total historical productivity as one measure of significance.

The Office has determined that a value of 10 percent is inadequately established to be used at this time; and, therefore, has deleted the proposed language in the final regulation, as far as it specified a value of 10 percent. In accord with many comments received, the measure of significance has been changed to that of total value derived from agricultural activities rather than acreage. The comparison of vegetation yield of the alluvial valley floor would be made to total yield of the affected farm. It is felt that the exemption of Section 510(b)(5)(A) is more equitably handled with an assessment of yield rather than area, because the area does not necessarily reflect the value of the area to the farm, while the yield should be a direct measure of this value. The Office will apply this indicator in a quantitative basis in each case.

The Office has substituted, in place of the 10 percent criterion, a criterion that relates significantly to a decrease in the expected annual income from the farm.

This concept should satisfy the concern of commenters who expressed a desire to have the alluvial valley floor regulations incorporate additional economic indicators. It relates the significance to "expected" income, which is in part a measure of historical production. In that manner, it also relates significance to a version of a "reasonable man" indicator. It further relates significance to agricultural activities conducted on the farm as a whole, and, thus, satisfies the desire to make the evaluation relate to the value of various crops. The Office believes this approach to closely reflect the intent of Congress that mining will not be allowed if it interferes with a farming operation.

In response to one commenter, the Office has also changed the phrase of proposed Section 786.17(c) from "eliminate" to "remove from production" in Section 785.19(e)(2), since the latter phrase is more consistent with the requirements of Section 510(b)(5)(A) of the act to not "interrupt" farming.

One commenter pointed out that Section 510(b)(5)(A) of the Act referred to "the *farm's* agricultural production" (emphasis added), and that the proposed Section 786.17(c) (final 785.19(e)(2)) should not, therefore, specify "one or more farms." The regulations have been edited accordingly.

A few commenters indicated that proposed subparagraph 786.17(d)(2) (final rule 785.19(e)(3)) should be modified by further defining the "potential increases" as "potentially adverse increases," and "potential decreases" as "potential adverse decreases." With these modifications, the commenter concluded the changes in total dissolved solids, depth to water, or surface floors would be related to adverse effects in land use or vegetation production, as opposed to being absolute changes.

In each of the proposed subparagraphs (d)(2)(i), (ii), (iii), and (iv), the changes indicating natural damage are related to irrigable land or area availa-

ble for agricultural activities, by reference to the parent paragraph (d). Proposed paragraph 786.17(d)(1) limited changes to those which (1) "cause significant and adverse changes in composition, diversity or productivity of vegetation" or (2) result in limiting the "adequacy of water for flood irrigation" of the irrigable lands. (This paragraph has since been moved to Section 701.5 as a definition of "material damage.") As the commenters did not note or comment on paragraph 786.17(d)(1), and did not identify deficiencies in this particular paragraph as it related to the subparagraphs actually cited, the Office believes that the concerns expressed have been adequately addressed and resolved in the final definition of material damage.

A few commenters recommended that the material damage criteria contained in proposed 786.17(d)(2), now Section 785.19(e)(3), be made discretionary, by adding the word "may" to the subparagraph, such that it would read ". . . may include, but are not limited too . . ." The Office believes that the proposed criteria are valid and should be employed in all cases to determine the potential for material damage, unless other criteria are shown to be better measures of adverse effects. The regulation allows for a demonstration of alternative measures by the applicant in lieu of (e)(3)(i), under (e)(3)(ii) or (iii). Thus, the rule has not been changed. One commenter asked the Office to add the phrase, "to the satisfaction of the regulatory authority" to subparagraph 786.17(d)(2)(i)(A), (now 785.19(e)(3)), to ensure that the applicant makes a valid showing that higher specific conductance will be acceptable. The Office believes this is implied in the regulation and has not made any changes.

(1) Two commenters supported the proposed criteria for defining material damage without reservations. Another commenter asked that protection of fish and wildlife be added to the material damage criteria. Since the definition of alluvial valley floors specifies "agricultural activities," and does not mention fish and wildlife values, the Office does not consider the alluvial valley floor provision to be an appropriate place to ensure protection to fish and wildlife. Thus, fish and wildlife values are protected under other provisions of the Office's regulations.

(2) Three commenters recommended that the Maas and Hoffman threshold values (specified in Section 785.19(e)(3)(i)) be cited as one of a number of guidelines for determining material damage as opposed to the only one. However, the commenters specified no other source of available data. In view of the applicants' opportunity to demonstrate the adequacy of other techniques, as provided for in subparagraphs 785.19(c)(3) (ii) and (iii), the Office has not accepted these comments.

(3) Two commenters believe that Section 786.17(d)(2)(ii), now 785.19(e)(3)(iv), did not allow beneficial dewatering of alluvial valley floors. The apparent prohibition was attributed to the combination of the proposed definition of material damage in Section 701.5 and the language of proposed 786.17 which, if not read in context, suggested that any increase in the depth of water would be prohibited. This was not the Office's intention. The replacement of the definition of material damage to ensure that significant and adverse effects are those referred to for material damage and the existing language of the cited Section which indicates that the dewatering, to be included, has to reduce the amount of subirrigated land, supports the determination of the Office that no additional changes are necessary.

(4) Commenters provided evidence from groundwater investigations conducted north of Decker, Montana, that the threshold values specified in Maas and Hoffman of specific conductance were presently exceeded for many plant species. The commenter speculated that mining would, therefore, be located in "dirty" water areas, rather than "clean" water areas, since compliance was alleged to be easier in the "dirty" water areas. The Office recognizes that the specified threshold values may be exceeded, as was shown in the proposed subparagraph 786.17(d)(1)(i)(A), which contained a phrase allowing the applicant to demonstrate that higher threshold values will not result in crop yield decreases (*see* final rule: Section 785.19(e)(3)(ii)). Since that language adequately resolves the commenter's concern, no changes were made.

(5) A few commenters argued that a margin of safety should not be expressed as proposed in subparagraph 786.17(d)(2)(i)(b), since threshold values varied at least 20 percent under varying site conditions. Instead it was recommended that determinations be made on a site-by-site basis. (The report of 20 percent variation was attributed to "Quality of Water/or Irrigation," Journal of the Irrigation and Drainage Division of the ASCE (1977).)

Because of the possible mis-interpretation of the word "safety," the Office has changed the term, to take into account the "accuracy of the correlations" (785.19(e)(3)(iii)) between total dissolved solids concentrations in water and crop yield declines.

(6) The Office has also reorganized the subparagraphs addressing material damage, to facilitate incorporation by reference of the data published by Maas and Hoffman. This reorganization has not affected the content of the final regulation compared to the proposed final regulation.

Several commenters either directly or indirectly requested that the Office only apply the consideration of material damage required by Section 510(b)(5)(B) of the Act to those alluvial valley floors that meet the conditions of Section 510(b)(5)(A) of the Act. Most comments were directed at the word "and" between subparagraphs (1) and (2) of paragraph 786.17(a) (now an "and" between 785.19(e)(1) (iii) and (iv)). It was argued that by using the word "and" rather than "or" between the two subparagraphs, the "material damage test" would be applied to undeveloped rangeland areas and to lands of small acreage (small as to having negligible impact on the farm's agricultural production) which were excluded from further consideration for prohibitions on mining by Section 510(b)(5)(A). Another commenter disagreed indicating that avoidance of adverse hydrologic consequences of mining in alluvial valley floors must remain distinct from farm land provisions.

In addition to changing the word "and" to "or," these commenters suggested that specific language from the Act be inserted in Section 786.17(d) to exclude material damage considerations from all other alluvial valley floors. The Office does not feel the changes recommended by the commenters is required or desirable. It is our intention that each of the four tests for approval of mining on, adjacent to, or under an alluvial valley floor contained in Section 785.19(e)(1)(i)-(iv) be met. The Office believes these requirements must be applied separately in order to implement the intent of Congress.

First, the legislative history is clear regarding the express congressional intent to prohibit mining in alluvial valley floors where there was farming and to also prohibit mining in areas adjacent to alluvial valley floors if the operation would materially damage alluvial valley floors where there was farming.

Mr. EVANS of Colorado. I would like a clarification of the requirements of Section 510(5)(a). Subsection (5) on page 258 appears to have two provisions; one in which it states, "the proposed surface coal mining operation . . . would not interrupt, discontinue or prevent farming on alluvial valley floors." That is subparagraph (a), and on page 259 subparagraph (a) ends with the word "or." Then, you have a new subparagraph (b), which says "not materially damage the quantity or quality of water in surface or underground water systems that supply these valley floors."

It is my understanding, in reading both subsections (a) and (b), an applicant would have to satisfy both subSection (a) and sub-

Section (b). It is not (a) or (b) but both (a) and (b). Is that correct?

Mr. MEEDS. I agree with the gentleman. I do not want, by my position, to be understood to be opening alluvial valley floors for indiscriminating mining. I think they still have to "not materially damage the quantity or quality of water in surface or underground water systems."

Mr. EVANS of Colorado. Even though they were not interrupting or discontinuing.

Mr. MEEDS. That is correct. 123 Cong. Rec. H. 3814 (Apr. 29, 1973).

This colloquy evidences clear congressional intent to prohibit mining not only in alluvial valley floors where farming would be discontinued or precluded by the operation but also where mining would materially damage the quantity or quality of water supplying alluvial valley floors. Thus, Congress intended that even though mining may not interrupt or discontinue farming on alluvial valley floors under Section 510(b)(5)(A), mining should still be prohibited under Section 510(b)(5)(B) if it materially damages water supplying alluvial valley floors.

In addition to alluval valley floors where mining would be prohibited by farming, without regard to farming, mining may not take place which would materially damage waters supplying an alluvial valley floor located outside the permit area. Initially, it should be noted that the Office has determined that mining can occur in an alluvial valley floor where there is no farming, provided that a showing is made before the permit is issued that the essential hydrologic functions of the alluvial valley floor can be restored.

The Office does not, however, believe that it can permit mining which would materially damage water supplying an alluvial valley floor outside the permit area because of the prohibitions of Section 510(b)(3) and 515(b)(10)(f). Section 510(b)(3) specifically says that no permit shall be approved unless the regulatory authority has found that the proposed operation "has been designed to prevent material damage to hydrologic balance outside the permit area." Section 515(b)(10)(f) requires that an operation preserve "throughout the mining and reclamation process the essential hydrologic functions of alluvial valley floors in the arid and semi-arid areas of the country." Reading these two Sections together, it is clear that alluvial valley floors outside the permit area must not be materially damaged by the mining operation taking place within the permit area. The prohibitions apply regardless of whether the permit area is on, adjacent to or under an alluvial valley floor.

Commenters argued that Section 510(b)(3) is merely a general admonition and imposes no actual duties beyond those set forth at Section 510(b)(5). This is clearly incorrect since Section 510(b)(5) was specifically concerned with prohibiting mining absolutely where there was farming in an alluvial valley floor, regardless of whether the agricultural uses of the land could be restored. The "material damage" test in Section 510(b)(5)(B) specifically prohibits degradation of the waters supplied to alluvial valley floors where there is farming, even if the area is within a permit area. Thus, Section 510(b)(5)(B) reaches alluvial valley floors not protected by Section 510(b)(3) since (b)(3) only protects the hydrologic balance *outside* the permit area. On the other hand, reading Sections 515(b)(10)(f) and 510(10)(b)(3) together leads to the necessary conclusion that mining will not be permitted which would affect alluvial valley floors if the applicant cannot show that: (1) in the case of disturbed alluvial valley floors, the essential hydrologic functions and agricultural productivity and utility of the land will be restored, and (2) in the case of alluvial valley floors outside the permit area, the hydrologic balance of the valley floor will not be materially damaged during or after mining.

(7) One commenter asked that paragraph 786.17(a) (now 785.19(e)(1)) be applied only when alluvial valley floors could "reasonably exist." It is believed that the commenter was concerned that the permit approval and denial criteria for alluvial valley floors would result in delay in obtaining a permit. The approval criteria apply to any application that meets the criteria of paragraph 786.17(a) (now 785.19(e)(1)), since Section 510(b)(5) requires a written finding on the part of the regulatory authority for any operation proposed to be located west of the 100th meridian west longitude. It may be possible in the context of submissions of State programs or particular Federal programs formation, to adequately demonstrate that no alluvial valley floors exist in certain well-defined coal regions. Then an exemption as urged by the commenter from Section 786.17, now 785.19(e), could be justified. At present, the Office has no basis for such exclusions, without first making the determination of the existence or absence of an alluvial valley floor pursuant to Section 786.17, now 785.19(e).

(8) One commenter asked that the ban on interruption, discontinuance, or preclusion of farming in Section 786.17(a)(1) (now 785.19(e)) be applied only to alluvial valley floors outside the permit area. This would be inconsistent with Section 510(b)(5)(A) of the Act, which is clearly intended to prohibit mining.

(9) One commenter noted that the requirement for a state permit in the *proviso* clause of Section 510(b)(5) of the Act required the permit to have been obtained in the year preceding August 3, 1977, rather than "before August 3, 1977," as was proposed in Section 786.17(b)(2) (now 785.19(e)(1)(i)).

The Office agrees and has changed the language accordingly. The Department has also moved the provisos of Sections 510(b)(5) and 506(d)(2) into Section 785(e)(1)(i). This limits the general application of the proviso to the significance for farming test, but would also apply the proviso indirectly to the "materially damage waters" test by virtue of the fact that 785.19(e)(1)(ii) applies that test to alluvial valley floors included in 785.19(e)(1)(i), as well as those outside a permit area. Therefore the "materially damage waters" test would not apply to those alluvial valley floors inside a permit area which are excluded from the "significance to farming" test by virtue of the proviso as set out in (e)(1)(i) (A) and (B).

In response to language contained in the preamble to the proposed regulation, one commenter asked that further guidance be given to operators and operations included in the proviso of Section 506(d)(2). This has been done by excluding operations that produced coal or had permits to mine based on plans which identified alluvial valley floors from the prohibition of Section 510(b)(5)(A) to interrupt, discontinue, or preclude farming.

(c) A few commenters expressed concern over the use of the word "coherent" as an adjective for farms (or ranches) in proposed Section 786.17(e) (now Section 785.19(e)(4)). The word implied that the land units should be contiguous. The Office used the term "coherent" to mean a logical land management system, not a contiguous parcel of land. A land management system can either be marked by the identifiable boundaries of an historic management unit defined by a combination of leased and owned lands subject to the management of a single operator, or a logical management unit including lands suitable for farming, but which have been removed from agricultural production and are not subject to the control of a person who manages them for agricultural purposes. In view of the confusion, the Office has determined that the word "coherent," and associated words, can be deleted and its intent retained.

(8) One commenter recommended that proposed Section 786.17(e), now 785.19(c)(4), be deleted, since this paragraph, a definition, was not deemed necessary in Sections 785.19 or 822. The combination of Sections 785.19 and 786.17 now provides the

special definition of a farm for all of the application procedures. The definition is specially designed to address the concerns expressed that applicants would discontinue farming on lands acquired for coal mining in order to facilitate mining of alluvial valley floors. Thus it has been retained under permit application procedures for alluvial valley floors. This reflects Congress' clear intent to prevent applicants from removing farmlands from production in order to avoid the provisions of Sections 510(b)(5)(A), i.e., 785.19(e)(1).

The commenter objected that no distinction is made under Section 510(b)(5) of the Act between farming and grazing or rangeland cropped for hay and grazed rangeland and, that, therefore, no distinction should be made. The Office agreed so appropriate modification was made of Section 785.19(e)(2) of the final rule.

§ 785.20 Augering operations.

Section 515(b)(9) provides specific environmental protection performance standards for surface coal mining and reclamation operations involving auger mining. 30 CFR 785.20 is promulgated under authority found in Sections 102, 201, 501(b), 503, 504, 507(b), 508(a), and 515(b) of the Act. Only minor changes for clarification were made to the proposed permanent regulations. The preamble accompanying the proposed permanent regulatory program found at 43 FR 41720 (Sept. 18, 1978) is hereby incorporated by reference for discussion of the basis and purpose of this Section.

This Section must be read in connection with Part 819, and the reader is referred to the preamble discussion of that Part for a treatment of issues relevant to this Section.

§ 785.21 Coal-processing plants and support facilities not within the permit area for a specific mine.

Authority for this Section is found in Sections 102, 201, 501(b), 503, 504, 506, 507(b), 508(a), 510(b) 515, 516, and 701 of the Act.

Under 701(28)(B) of the Act, coal processing plants and related support facilities not located within the permit area for a specific mine, but ". . . incident . . ." to the operation of coal mines are defined to be "surface coal mining operations." Under Section 506(a) of the Act, all of those operations must obtain permits under regulatory programs. Under Section 515 of the Act, environmental protection performance standards are applicable to those operations. Section 785.21 will implement the Act's permit requirements for these operations and help ensure that they will be conducted in compliance with the special environmental protection standards in Part 827 of Subchapter K.

OSM wants to ensure that the same level of environmental protection applies to those facilities where coal is prepared for market as to mine-site operations, even though those preparation facilities may exist outside the permit area of a mine. This Section will be implemented together with Part 827, and the reader is referred to the preamble for that Part for a discussion of issues related to this Section. In writing these final regulations, OSM considered the following alternatives, all of which were suggested by comments to the proposed rules.

1. That OSM control only onsite coal-processing plants and facilities (storage piles, waste piles, sludge ponds, washers, loading and handling facilities, and the like). Some coal-processing plants and facilities may serve a number of remotely located mines, and OSM believes these coal-processing plants and facilities should be subject to the same performance standards as processing plants and facilities located on a specific permit area for a mine. Excluding such facilities would probably result in most, if not all, such facilities being located outside the permit areas for mines in the future in order to avoid regulation under the Act. This result would be clearly contrary to the intent of Congress as reflected in the definitions of "surface coal-mining operations" and "surface coal mining and reclamation operations" in Section 701 of the Act. OSM has the authority and obligation to prohibit adverse environmental and health and safety impacts of coal-processing plants wherever located.

2. That each State be allowed to establish a separate agency within the regulatory authority to control facilities off the minesite. Although this might be permissable under Section 503 of the Act, it may result in multiple and possibly uncoordinated regulations which may be inefficient. OSM will consider proposals for separate divisions within regulatory authorities having authority over these facilities in the context of State program submittals. Such proposals will be evaluated under the Standards in Section 732.15 of these regulations.

3. That OSM regulations apply to minesites, all offsite facilities, and all connecting transporting facilities. This would be impracticable and unnecessarily duplicative since OSM believes that other agencies adequately control transportation facilities and routes;

4. That OSM does not have the authority to require a permit for coal-processing plants and support facilities not within a permit area of a specific mine. OSM finds its authority to issue this regulation under Sections 506, 507, and 509 of the Act. These Sections require a permit, and as a part of the permit application a reclamation plan which shall meet the requirements of the Act. Section 701(28)(A) of the Act authorizes regulation of ". . . activities . . . including . . . processing or preparation." OSM believes the phrase "at or near the minesite" immediately preceding the proviso in 701(28)(A) applies only to the "loading of coal for interstate commerce" which immediately precedes it. Independent authority is found in Section 701(28)(B), which defines "surface coal mining operations" to include ". . . other areas upon which are sited structures, facilities or other property or materials on the surface, resulting from or incident to such activities, . . ."

5. That this Section enumerate all the types of facilities possibly covered by Section 701(28) of the Act, including all public roads on which coal is handled, all offsite coal stockpiles at public buildings, all wholesale and retail coal yards and all electric generating plant loading and storage facilities. The permit requirements of the regulatory scheme for coal-processing plants have not been expanded to include these facilities, because OSM has not been able to establish that the environmental risks from such facilities are of sufficient magnitude that permits should be required. At this time, OSM is only requiring regulatory authorities to extend their permit requirements as far into the stream of commerce as those activities over which mine operators and the coal handlers who directly serve them, such as coal processors, have or could have control of operations. This includes all facilities on the minesite, all facilities incident to the mine at or near the site, and coal-processing plants no matter where located. This in no way shall be interpreted as a determination that the Act limits OSM's authority or the authority of any regulatory authority to enforce the Act's provisions at any "surface coal-mining and reclamation operation" included within the broadest interpretation of the language of Section 701(28) of the Act.

§ 785.22 In situ activities.

This Section describes the requirements for obtaining a permit for conduct of an in situ processing operation. Authority for this Section is found in Sections 102, 201, 501(b), 503(a), 504, 506(a), 507(b), 508(b), 508(a), 510(b), 515, 516, 517, and 701 of the Act. Under Section 701(28)(A) of the Act, "in situ" mining of coal is deemed to constitute surface coal mining operations and under Section 506(a) of the Act, can only be conducted pursuant to permits under regulatory programs. Under Section 515 of the Act, environ-

mental protection performance standards are applicable to those operations. Sections 785.22 implements the Act's permit requirements for these operations and ensures that they will be conducted in compliance with the special environmental protection performance standards for these operations in Part 828 of subchapter K. The reader should consider Section 785.22 together with Part 828.

The permit application should discuss all requirements under 30 CFR 817, which contains the environmental performance standards for underground mining activities. In addition, the in situ processing operation application must ensure that other applicable performance standards in subchapter K and the regulatory program which deal with these operations are described. Paragraphs 785.22(b) (1)–(4) contain specific permit requirements to ensure that water and air quality standards are maintained. The protection of the hydrologic quality of surface and ground water in the mine permit area and adjacent areas must be achieved. The permit must address where and how exploration and injection holes will be drilled and cased so that the regulatory authority can determine that fluids, gases, or other materials injected into the coal seam will not escape into the hydrologic system. In a similar manner, the emission of residual materials or wastes from the processing operation must be isolated from the hydrologic resources and contained in approved structures or impoundments or until final disposal, or treatment of the materials is achieved. Appropriate measures to reduce the possibility of fires which would pose a public safety hazard during or following the in situ processing operation must be described as required by the regulatory authority. The control procedure for treating and containing harmful solids, liquids, or gases from the in situ processing operation to protect the welfare of the public and the surrounding environment is to be presented.

The permit application must describe the proposed equipment and techniques to be employed to monitor the impact the in situ operation will exert on water and air resources in compliance with the appropriate regulatory program.

A comment was received which recommended that subsidence control programs should be required with all permit applications for in situ processing operations. The Office did not make any modifications to the permanent program rules in response to this comment because subsidence control is found in 30 CFR 784.20 and 817.121–126. These provisions are a part of the general permit requirements applicable to these activities under Section 785.22 (b) and (c).

PART 786—REVIEW, PUBLIC PARTICIPATION AND APPROVAL OR DISAPPROVAL OF PERMIT APPLICATIONS AND PERMIT TERMS AND CONDITIONS

INTRODUCTION

Part 786 in the final rules is a consolidation of Parts 786 and portions of Parts 787 and 788 of the proposed regulations. These Parts were combined so that all regulations generally relating to procedures and standards for review and decisions on applications in the permit process could be found in one place, in the chronological order of the review and decision process.

A few general comments were received concerning former Part 787 requesting that an index be prepared for all public participation Sections contained in the regulations. It was decided not to prepare such an index, but to put all public participation regulations relating to permit applications in Part 786. Each program must contain substantially the same type of public participation as called for in these regulations, subject to 30 CFR 731.13, but may be organized differently.

§ 786.1 Scope.

Authority, basis and purpose of this Section are discussed at 43 FR 41720 under Section 786.1; at 43 FR 41724 under Section 787.1; and at 43 FR 41726 under Section 788.1.

§ 786.2 Objective.

Authority, basis and purpose of this Section are discussed at 43 FR 41720 under Section 786.2; at 43 FR 41724 under Section 787.2; and at 43 FR 41726 under Part 788.

§ 786.4 Responsibilities.

Authority, basis and purpose of this Section are discussed at 43 FR 41720 under Section 786.4; at 43 FR 41724 under Section 787.4; and at 43 FR 41726 under Part 788.

§ 786.5 Definitions.

Since there were requests made to define terms found in this Part, a new definitions Section has been added. The statutory authority for this Section is Sections 102, 201(c), 501(b), 503, 504–507, 510, 515, and 516 of the Act.

A commenter requested that the terms "willful violation" "irreparable damage to the environment," "demonstrated pattern of violation", "duration" of a violation, and "nature" of a violation be defined for use in the regulations implementing the last half of Section 510(c) of the Act. The terms "willful violation" and "irreparable damage to the environment" have been defined in this new Section. Defining these terms will help clarify the requirements of Sections 786.17(d) and 786.19(i). The remaining terms were not defined, because it was believed that their use would vary greatly with different situations.

§ 786.11 Public notices of filing of permit applications.

Authority, purpose, and basis for this Section are discussed in 43 FR 41724 (Sept. 18, 1978), under Section 787.11

1. As set forth in the proposed regulations, Section 787.11(a) required the applicant to place an advertisement of its application in a local newspaper once a week for four weeks. Subsection 787.11(a)(2) required that the advertisement contain a map showing the specific location and boundaries of the proposed permit area. In the final rules, Section 787.11 has been numbered as Section 786.11.

2. Several comments were received concerning the map requirement. Many State and industry commenters wanted to delete the map requirement altogether, stating that it was difficult and expensive to publish a map in the paper and that the general public would find maps less helpful than textual descriptions. Others wanted to require a verbal, textual description of the permit area only. They argued that if the verbal description was complete enough, it would afford adequate public notice so that interested citizens could go to the courthouse to review the complete permit application, including the maps.

Citizens groups argued that the map requirement should be retained, since the best public notice reasonably possible is vital to public participation in the permit process. They argued that as the rest of the permit regulations have strict time limits, the public would miss its opportunities to comment, object, and request informal conferences, unless the best early notice was provided in the newspaper. Others argued that additional information should be added to the advertisement, such as the names of the adjacent property owners and more detailed information concerning the size and type of the mining operations.

One commenter wanted to delete the map requirement and use, instead, a newspaper advertisement with ½" high letters in order to give the greatest possible notice to the public. Others stated that the map requirements were confusing and wanted clarification concerning the information required to be on the map.

Some commenters argued that there are special problems with providing newspaper notices to the public in the

West, because of the great distances involved and the limited ability of local newspapers to reach a wide circulation. Some State commenters wanted to give the regulatory authority more flexibility in designating which maps would be appropriate to use in the newspaper advertisement.

3. In response to these comments, the Office has made substantial changes in the required contents of newspaper advertisements.

(a) It still considers the use of a map in the advertisement of the proposed application as the preferred means of giving notice to the public. However, there may be instances when a verbal description will be a better means of giving such notice, so the regulation has been changed to provide for the alternative of a written description of the proposed permit area. The requirements for the contents of the map or the description contained in Section 786.11(a)(2)(i)–(iv) have also been simplified.

There is no prescribed type of map or form of map set forth in the final regulations. This will be left to the regulatory authorities to specify under particular regulatory programs. Each State will have different maps which are in common usage by the surface mining industry. Some States already require small general location maps in the corner of more detailed maps submitted to the regulatory authority. Maps such as these could be used in the advertisement. The critical concern in these rules is that the map, if used, be large enough to be read and used by local residents, and that it contain enough information so that the proposed permit area is easy to locate.

The same principles hold true if a verbal description is used. The specific items to be used in the map or verbal description are listed in Section 786.11(a)(2)(i)–(iv). If a verbal description is used, highly technical legal terminology should be avoided in describing the boundaries of the proposed permit area. The exact location of the proposed permit area should be immediately apparent to any local resident reading the description, preferably by use of local geographic names. The name of the USGS 7.5 minute quadangle which contains the proposed permit area is required, so that persons who desire a more precise location of the permit area can easily do this by obtaining their own USGS topo map. This is important in areas where the proposed permit area may be a considerable distance from the county courthouse, where a USGS map will be included in the file of the permit application.

(b) The suggestion that the notice be printed in ⅛" high letters in the newspaper was rejected, since this would take up an inordinate amount of space in the newspaper, be expensive, and still would not give notice as well as a map. Pursuant to Section 507(b)(6) of the Act, the newspaper advertisement is supposed to notify the public that a surface coal mining operations application has been made, who made it, where the proposed permit area will be located, where a copy of the application can be found, and where and when comments can be submitted on the application.

Comments suggesting that additional information be placed in the newspaper advertisement were also rejected. While it might be desirable to put as much information as possible concerning the proposed operation in the newspaper, all relevant information is contained in the application on file at the local courthouse. It should be noted, however, that a State regulatory authority would not be precluded from requiring additional information.

(c) Regarding the problems with newspaper circulation in the Western States, the Office believes that the requirement for four weekly publications of the advertisement should generally suffice to insure that the public receive notice. However, if in particular localities close examination reveals that this system will not afford adequate notice, more effective procedures may be specified for individual permanent regulatory programs.

3. Under Section 522(e)(4) of the Act, mining is prohibited within 100 feet of the outside right-of-way of a public road, subject to two exceptions. Approval of those exceptions may be granted by the regulatory authority only after notice and opportunity for a public hearing. Proposed Section 787.11(a)(5) required that the newspaper advertisement of the permit application also contain notice of any proposed mining within 100 feet of a public road or any relocation of a road caused by mining. Several commenters asked that this requirement be deleted or moved to Section 778.16, which concerns the relationship of the permit application to areas designated as unsuitable for mining. These comments were rejected.

The notice of proposed mining near a public road is required so that Section 522(e)(4) of the Act and 30 CFR 761.11 are adequately implemented. Placing the notice in the public advertisement of the permit application will also allow any informal conference on the application to serve as a public hearing on the road relocation, as is set forth in Section 786.14(d). Moving this Section to Section 778.16 would only confuse matters concerning the content of the public advertisement.

4. A number of comments were received suggesting that the public notification process not begin until the regulatory authority determines that a permit application is complete, so that public participation is based on all relevant information. Other commenters suggested that the application be filed at the local courthouse as early as possible, preferably at the same time as the first date of the required newspaper advertisement.

(a) The suggestion that a finding of completeness be required before the public notification process begins was accepted. The word "complete" has been added before the word "application" in Sections 786.11(a) and 788.14(b)(2).

The concept of a "complete application" is defined at Section 770.5, is found in Section 771.23(a), and flows through the rest of this Subchapter. This is so all necessary planning and information gathering will be finished prior to filing the application.

However, even after the filing required by Sections 771.23(a) and 786.11(a), there may need to be subsequent, modifications to applications, if some information or plans are found to be inadequate and not complete, as a result of public participation. Section 786.11(d)(2) therefore, requires that any subsequent revisions of permit applications be made simultaneously in the copy on file with the regulatory authority and the copy on file at the local courthouse.

(b) In response to requests that the public have as long a period as possible to review permit applications, the Office decided to change the regulations to require the filing of copies of permit applications at the local courthouse at the same time as copies are filed with the regulatory authority, the first date of newspaper publication. Because of the highly technical engineering and hydrological data contained in permit applications, it was felt that a longer period was needed for public review of the applications. This change gives the public 28 more days to review the application prior to the deadline for the filing of objections, comments, or requests for informal conferences. Hopefully, this will also reduce objections and requests for informal conferences, and allow objectors to narrow their areas of concern prior to requesting a conference.

5. One comment was received asking that Section 786.11(c) specify the governmental units to whom actual notice of a permit application is to be sent. This comment was rejected. The determination of which governmental units are to be sent such notice is a task for each regulatory authority familiar with the governmental and administrative structure in its particular State. The Office's regulations cannot list all governmental units in all States to whom notice is to be sent.

6. Many commenters argued that Sections 786.11(c)(1)–(4) be modified to delete "Federal agencies" as governmental entities which would receive actual notice of a permit application. These commenters contended that Section 513(a) of the Act does not require the regulatory authority to notify Federal agencies. It is true that Section 513(a) expressly requires giving notice only to "local" public bodies. However, the purpose of Section 786.11(c) is broader than merely implementing the express language of Section 513(a) of the Act. Under the Act and these regulations, Federal and State agencies have a wide variety of roles to fulfill in the permit process:

(i) "Appropriate Federal and State agencies" (e.g., EPA, USGS, USSCS, State/water-quality data collection authorities) have to supply area-wide water quality data for the purposes of hydrologic assessments. Sections 507(b)(11), 510(b)(3), of the Act;

(ii) The Secretary of Agriculture through the USSCS has to review permit materials related to prime farmlands. Sections 507(b)(16), 510(d), 515(b)(7), of the Act, 30 CFR 779.27, 783.27, 785.17, 823.1 *et. seq.*

(iii) Permits under the Act must be coordinated with permit and plan requirements under laws administered by other Federal and State agencies, under Sections 503(a)(6), 504(h), 508(a)(9), of the Act, and 30 CFR 770.12. Further, additional coordination may be required under Federal historical preservation and fish and wildlife statutes. 30 CFR Part 761; Sections 770.12; 779.20/783.20; 780.16/784.21; 786.19(o).

(iv) Permits under the Act can only be issued after the applicant demonstrates that it will comply with all applicable design and performance standards. (Subchapter K). Many of the standards involve other Federal and State agencies (See Sections 515(b)(2), 515(b)(8), 515(b)(10)(3), 515(b)(12), 515(b)(15), 515(c), 515(e) of the Act), for the purpose of making concurrences with or to comply with the performance standards used by operators.

(v) Permits cannot be issued if the applicant is currently in violation at other mines of air or water pollution control laws enforced by other Federal or State agencies (Section 510(c) of the Act) unless those other agencies agree that satisfactory abatement procedures are being followed. *See* 30 CFR 786.19 (h) and (i).

(vi) Coal mining on Federal lands necessarily involves Federal agencies, such as the Secretary of Interior (see Section 523 of the Act); USGS, BLM (See 30 CFR Parts 211 and 741) and, on National Forests, the Secretary of Agriculture and the U.S. Forest Service. (See Section 522(e)(2) of the Act).

Because implementation of the permit scheme under the Act requires substantial involvement of other Federal and State agencies on a continuing basis, there must be adequate provisions made in the regulations for the regulatory authority to ensure that those other agencies are notified, and, if relevant, participate in the application review process by filing comments with the regulatory authority. Furthermore, Section 513(b) of the Act expressly authorizes the "head of any Federal, State or local governmental agency or authority . . ." to request that the regulatory authority hold informal conferences, which may be important to effect the "coordination" required by Sections of the Act. In order to achieve this coordination, the Office's regulations need to provide for adequate notice to other Federal and State agencies. Therefore, this requirement was retained in the final regulations.

7. Many commenters objected to the provision in Section 787.11(c)(5) which required the regulatory authority to provide actual notice of permit application to any persons who request such notice. Some commenters suggested that the right to request actual notice of permit applications be limited to persons with an interest which may be adversely affected by the application. Other commenters stated that the request should be renewed periodically to prevent unnecessary notices. Others wanted the entire Section deleted as unnecessary and unduly burdensome. Still others wanted actual notices sent to all surface and mineral owners within 500 feet of a proposed mining operation.

The Office has decided to accept the comments suggesting that the Section be deleted. Actual notice is not specifically required by the Act and would impose a significant administrative burden on the regulatory authority.

8. Many commenters objected to the requirements in Section 787.11(d) allowing public access to permit information. Some objected to the requirements for filing a copy of the permit application at a local court-house, and others asked what alternative public offices would be appropriate for filing the copy. Some objected to allowing the public to copy permit information and others wanted mandatory langauge used requiring that certain information be kept confidential.

Section 507(e) of the Act requires that a copy of the application filed with the regulatory authority also be filed at the county courthouse for the area where the mining is proposed. Therefore, comments suggesting deletion of the Section of the regulation implementing these requirements were rejected.

Section 507(e) of the Act also allows the regulatory authority to approve another "Appropriate public office . . . where the mining is proposed to occur," for filing of the copy of the application. Several comments were received from States asking whether a particular office would be "appropriate" as an alternative to a local courthouse. In response, the following language was added to the last sentence of Section 786.11(d)(1): ". . . *public office, if it is determined that the office will be more accessible to local residents than the county courthouse.*" A purpose of the Act is to give local residents who will be most affected by a proposed operation the greatest opportunity reasonably possible for access to information about the application. See Section 507(b)(6) of the Act. Further, as commenters pointed out, requiring filing of a copy of the application at the county courthouse may not always accomplish this purpose, especially in the West where some counties encompass vast distances. The additional language will ensure that the criteria used in approving an alternate public office is convenience and accessibility for the public, rather than convenience for the regulatory authority or the operator.

Generally, all information contained in a permit application on file with the regulatory authority is to be made available to the public for inspection and copying. See Sections 102(i), 507(e) and 517(f) of the Act. There are certain exclusions from this general rule found at Sections 507(b)(17), 508(a)(12) and (b) of the Act. These exclusions state that certain information concerning the coal seam itself, and reclamation plan information required to be kept confidential under State law shall be kept confidential. Otherwise, all information is available to the public. Therefore, comments suggesting that copying not be allowed are rejected. Moreover, confidentiality provisions at Section 786.15 are adequate to implement the Act.

§ 786.12 Opportunity for submission of written comments on permit applications.

Authority, purpose, and basis of this Section were discussed at 43 FR 41725 (September 18, 1978), under Section 787.12.

1. Many comments were received objecting to proposed Section 787.12(a)(2) which allowed any person to file comments concerning a permit application. Some commenters urged that the entire Section be deleted as being beyond the requirements of Section 513(a) of the Act, while others urged that the right to file comments be limited to persons with interests which may be adversely affected by

the proposed mining operations. In response, the Office has decided to limit the right to file comments on the application to governmental units which receive notice of the filing of the permit application. The need for governmental agency comment on the application is important to effect the coordination requirements of the Act, as explained above. This does not limit in any way the right of other persons who are or may be adversely affected by issuance of a permit for the proposed operations to file objections to the application under Section 786.13, or to request an informal conference on the application under Section 786.14.

2. Many commenters requested that Section 786.12(c) be reworded to require that all comments submitted to the regulatory authority under Section 786.12 also be transmitted to the applicant. These comments were accepted to insure that the applicant is provided with an opportunity to respond to comments.

§ 786.13 Right to file objections.

Authority, purpose and basis for this Section were discussed at 43 FR 41725 (September 18, 1978), under Section 787.13.

Many comments were received requesting that proposed Section 787.13(a) be modified to more closely reflect the language of Section 513(b) of the Act to limit the right to file written objections to those persons with interests which are or may be adversely affected by the proposed operations. The Office accepted these comments.

§ 786.14 Informal conferences.

Authority, purpose and basis for this Section were discussed in 43 FR 41725 (September 18, 1978), under Section 787.14.

1. Many comments similar to those discussed above for Section 786.13 were received concerning the rights of persons to request informal conferences on permit applications. Proposed Section 787.14(a) gave any person the right to request such a conference. Commenters suggested that this right be restricted to those persons with an interest which is or may be adversely affected by the issuance of the permit, as found in Section 513(b) of the Act. These comments were accepted.

2. Citizens groups were concerned that proposed Section 787.14(b)(3) gave too much discretion to the regulatory authority in determining whether to conduct visits to areas of proposed mines in preparation for informal conferences. Some suggested that the visits be made mandatory upon request, while others asked that visits be denied only if the request were made in bad faith. Industry commenters wanted the right to be deleted or limited by the concurrence of the operator.

There will be many factors to consider in determining whether a minesite visit would be useful in particular cases, such as terrain, distances involved, availability of data on the area already on file, the materiality of data to be obtained by a visit and the number of persons requesting such a visit. Weighing of these factors is best left to the discretion of the regulatory authority, on a case-by-case basis. However, that discretion is not to be used by the regulatory authority so as to defeat public participation in the permit process. Visits to proposed minesites prior to an informal conference should ordinarily be conducted upon request, unless there are substantial reasons not to do so. Informal conference preparation includes the right to minesite visits under the Act. therefore, the final regulation has been left as proposed.

3. A number of comments were received on proposed Section 787.14(b)(4) concerning the determination of the issues to be heard at the informal conference. As proposed, the issues at the informal conference would be limited to those raised in written comments, objections, and requests for hearing. In the preamble to the proposed regulations, the Office solicited comment on how issues were to be determined. Some commenters argued that the issues to be heard should be those raised at any time prior to the conference. Others wanted to allow issues to be raised at the time of the hearing, while others wanted a limit placed on the issues to be considered. Some commenters urged that the regulatory authority be allowed to determine which issues could be heard.

The Office feels that all issues raised in comments, objections, and requests for hearings, as well as the issues raised by the criteria for approval of a permit found in Section 786.19, would be proper subjects for these conferences. Since it is the object of the regulations to allow regulatory authorities to control procedures of informal conferences, the Office has decided to delete proposed Section 786.14(b)(4) in the final rule. This will allow the regulatory authorities to adopt whatever procedures they consider necessary to control consideration of issues at the conferences. However, this is to be done subject to the policy that all information concerning the sufficiency of the application, the applicant, the area to be affected, and whether the criteria for approval to be met are relevant and proper for consideration at these conferences. Therefore, procedures adopted by regulatory authorities cannot unduly restrict public participation at the conferences, and must allow for full and free examination of all relevant issues concerning the permit application.

§ 786.15 Public availability of information in permit applications on file with the regulatory authority.

Authority, purpose and basis for this Section are discussed in 43 F.R. 41725 (Sept. 18, 1978), under Section 787.15.

1. Many industry commenters objected to the rquirements in proposed Section 787.15(a) which allowed public access to permit information. Some objected to allowing the public to copy permit information and others wanted mandatory language used requiring that certain information be kept confidential.

Generally, all information contained in a permit application on file with the regulatory authority is to be made available to the public for inspection and copying, pursuant to Sections 102(i), 507(e), and 517(f) of the Act. There are certain exclusions from this general rule found at Sections 507(b)(17) and 508(a)(12) and (b) of the Act. These exclusions state that certain information concerning the coal seam itself and other information which is required to be kept confidential under State law shall be kept confidential.

As exceptions to the general purposes of the Act, these exclusions should be interpreted narrowly. The language used in the final rules provides for adequate exclusions. Otherwise, all information will be available to the public. Comments suggesting that copying of permit information not be allowed were rejected, because if information is publically available, then it should be allowed to be disseminated under Section 517(f) of the Act.

2. One commenter expressed the concern that unless Section 786.15(a)(3) was deleted or limited, the State could withhold reclamation plan information essential to informed public participation in the permit process. This Section is required by Section 508(b) of the Act. However, it should be pointed out that this exclusion to the public availability of information pertains only to reclamation plan information required by Section 508(a) of the Act, and not to any other permit or bonding information required under other provisions of the Act. Moreover, State law is no longer in effect in a Federal program. (See Section 504(a)), of the Act.) Section 786.15(a)(3) will have no applicability where the Office is the regulatory authority for a Federal program.

3. One commenter expressed concern that information required to be kept confidential under Section 786.15 be shared with the Office upon request.

It was felt that no change in Section 787.15 was necessary, since information sharing is adequately covered by 30 CFR 840.14 and 842.16.

§ 786.17 Review of permit applications.

Authority, purpose and basis for this Section are discussed in 43 FR 41726 (September 18, 1978), under Section 788.12.

An additional Subparagraph has been added to Section 786.17(a) in the final rules, by transfer and modification of material from proposed Sections 780.15(c) and 784.20(c). This addition was made in response to comments suggesting that coordination of reclamation plan contents of applications with fish and wildlife management agencies be the responsibility of the regulatory authority, rather than the applicant. Authority for Section 786.17(a)(2) of the final rules is Sections 102, 201, 501, 503, 504, 505, 506, 507, 508, 510, 515, 516, 517, and 522 of the Act, The Endangered Species Act (ESA), and The Fish and Wildlife Coordination Act, and regulations adopted by The U.S. Fish and Wildlife Service under the ESA.

1. Many comments were received concerning the schedule of violations which permit applicants are to make available under Section 787.17(c). This Section requires the the applicant list all violations of the Act or other State or Federal air and water environmental protection statutes or regulations at any of its coal mining operations for a three-year period proceeding the application. If the regulatory authority ascertains during the review of a permit application that violations of those laws currently exist, then Section 786.17(c)(1) would require that satisfactory proof of the abatement of the violation be submitted by the applicant to the regulatory authority, unless the conditions of Section 786.17(c)(2) apply. Finally, until satisfactory proof of abatement of those violations is submitted, 30 CFR Section 786.19(g)–(h) would preclude issuance of a permit.

(a). Many commenters objected to the language in Section 787.17(c) which called for listing of all violations of *"soil* or water environmental protection laws." (emphasis added.) The commenters suggested that this language be changed to "air or water environmental protection" to be consistent with Section 510(c) of the Act. Section 510(c) of the Act covers *"air* or water environmental protection" laws, not *"soil* or water." The choice of "soil" instead of "air" in the proposed regulations was an oversight and has been changed to specify that violations of "air or water" environmental protections laws are to be listed.

(b) There were also many objections to the requirement to list violations of laws outside the State in which the application is filed. As is discussed in detail in the preamble to Section 778.14, the Office accepted these comments, in part. The Office has concluded that the regulations implementing Section 510(c) of the Act should include violations of all State laws, rules, and regulations that are adopted under Federal air or water environmental protection statutes and regulations. Section 786.17(c) has been clarified to indicate that only violations of those State laws which are passed to implement Federal air or water environmental protection laws are subject to the final rules.

In addition, language has been added at Section 786.17(c)(2), to allow the regulatory authority to issue a permit when, despite violations subject to Section 786.17(c), the applicant is pursuing, in good faith, rights to administrative or judicial review of the violations in direct appellate action. This provision is explained in greater detail in the preamble to Section 778.14. In addition, Section 786.17(c)(2) contains a further qualification that if the appeal is lost at any point by the applicant, any surface coal mining operations being conducted under a permit issued according to this Section must be terminated until the provisions of Section 786.17(c)(1) are satisfied. This qualification was deemed necessary because the policy articulated by Congress no longer applies. That is, pursuit of the appeal can no longer be viewed as being completely in "good" faith once a stay is denied or the appeal lost on its merits.

3. One commenter asked that the word "process" be defined as used in the phrase found in Section 786.17(c)(1)(ii): "violations which are in the *process* of being corrected." Section 786.17(c) implements Section 510(c) of the Act, which requires that all permit applicants attach a schedule of violations of air or water environmental laws, as well as violations of the Act to their application. No application can be issued if any violation is listed, unless it is shown that it has been corrected, or is in the process of being corrected in a manner satisfactory to the governmental unit with jurisdiction over the violation. Therefore, definition of the term "process" would be left to the agency that originally charged the applicant with the violation. The Office felt it unnecessary to add a definition of that term.

4. Many commenters asked that a new Section be added to the regulations to specify procedures for hearings on permit denial for a demonstrated pattern of violations pursuant to Section 786.17(d). The regulations provide the permit applicant with an "opportunity for an adjudicatory hearing . . . as provided for in the regulatory program." Industry commenters wanted the procedures left unspecified, and determined by the regulatory authority.

The hearing on a pattern of violations is the only formal hearing provided for in the permit review process prior to a decision being made by the regulatory authority. If there is a finding that the applicant has a demonstrated pattern of violations then, under Section 786.19(i), no permit can be issued. An adjudicatory hearing of this importance should be afforded the same procedural safeguards as set forth in proposed Part 789 for formal hearings to review decisions on permits. Therefore, language has been added to Section 786.17(d) which specifies that all hearings on patterns of violation shall be conducted pursuant to the same procedures as are set forth in 30 CFR Section 787.11. Section 786.17(d) was not modified, therefore. However, this Section should not be read so as to unfairly penalize the permit applicant whose prior violations of the Act were caused by owners who are no longer currently involved in any way with the company. In such circumstances, there would not be the requisite "duration" to justify a finding that the applicant had compiled a "pattern of willful violations of the Act."

§ 786.19 Criteria for permit approval and denial.

The authority, purpose, and bases for this Section were, in general, discussed in 43 FR 41721–41723 (September 18, 1978), under proposed Section 786.15.

1. Because of reorganizing and renumbering of certain portions of the regulations, editorial changes were made in Section 786.19. In Subsection (d) the phrase "The area within . . ." has been deleted as being redundant. In Subsection (e) the reference to 30 CFR 761.12(b) has been changed to Section 761.11(c). In Subsection (f) reference to right-of-entry information in 30 CFR 782.15 has been added. Subsection (g) had been condensed by simply referring to the applicant's duty under Section 786.17(c) to submit satisfactory information on its history of compliance. In subsection (m) the reference to 30 CFR 816.124 and 817.124 have been corrected to Sections 816.133 and 817.133.

2. Many comments were received on proposed Section 786.11 requesting that a finding of completeness by the regulatory authority be required before an application is submitted for the public review process. As discussed in the preamble to final Section 786.11, the Office has agreed that such a finding will be made at that point in the permit process. In addition, under final Section 786.19(a) such a finding

will be necessary after the opportunity for public participation, in order for the permit application to be approved or disapproved, as provided for under Sections 510(a) and (b) of the Act. If the application is not complete, then it must be denied. If the applicant desires to complete the application and reapply, it must be handled as a new application.

3. Several comments were received concerning the requirement in proposed Section 786.15(e) that the regulatory authority find that a proposed operation would not adversely affect any places listed in the National Register of Historic Places, or any places eligible for such listing. The commenters felt that only those places actually listed should be protected and that the word "eligible" should be deleted. The Office did not accept these suggestions for the reasons set out in the preamble to Part 761.

These same commenters also suggested that proposed Section 786.15(e) be amended to explicitly specify that a permit could be issued, notwithstanding adverse effects on a public park or historical place, if its approval was granted by the regulatory authority and agency with jurisdiction over the park or place. These comments were not accepted because additional language was unnecessary. Section 786.19(e) of the final rules cross-references to Section 761.11(c) of the final rules. The latter Section contains the exception langugage suggested by the commenters.

4. Several comments were received on proposed Sections 786.15(g) and (h) which require findings by the regulatory authority concerning the applicant's history of compliance. One commenter felt that the grounds for denial of a permit under those Sections were being interpreted too narrowly. It was argued that a denial should also be based upon previous permit revocations, bond forfeitures, violations for mining without a permit, or any other failure to comply with the Act.

5. Several commenters suggested that the violations considered in determining a pattern of violations should be limited to those which occurred within the past five years. Section 786.17(d) is based upon Section 510(c) of the Act. This Section of the Act places no time limitation upon the violations to be considered. Research of the legislative history reveals no indication that Congress intended that Section 510(c) of the Act be limited only to violations occurring in the last five years. Indeed, a long and continuing history of past violations is the most compelling case for invoking this provision.

The Office is aware that many States will not issue permits to operators who have had previous permits revoked or bonds forfeited. As a more stringent enforcement tool, this would not be precluded by either final Sections 786.17(d) or 786.19(i). These Sections require permit denial after a finding that an operator has a demonstrated pattern of violations. Although this finding could be made upon the basis of a number of violations which may not have resulted in a revocation or forfeiture, it would also be proper for the regulatory authority to consider any revocations and forfeitures, as well as all other failures to comply with the Act.

In order to make clear that a permit applicant must have a history of compliance with all portions of the Act, and not just Title V, final Section 786.19(h) has been added to require a finding that an applicant has paid all applicable reclamation fees required under Title IV of the Act.

5. One commenter suggested that proposed Section 786.15(h) be revised so that violations to be considered in determining a pattern of violation be limited to those occurring in the past five years. This same comment was made in relation to proposed Section 788.12(d) which sets forth the requirements for the determination of a pattern of violations. The Office has decided that the regulatory authority is not to be so limited in considering past violations. Discussion of this decision is found in the preamble to final Section 786.17.

6. A few commenters contended that there was no justification in the Act for proposed Section 786.15(i). This Section requires that the regulatory authority find that a proposed operation will not be inconsistent with other actual or anticipated surface coal mining and reclamation operations adjacent to it. Section 510(b)(3) of the Act requires that the regulatory authority assess the probable cumulative impact on the hydrologic balance of all mining anticipated in an area. In addition, it must also find, prior to approval, that a proposed operation will minimize damage to the hydrologic balance outside the permit area. This requirement is provided for in Section 786.19(c). In addition Sections 508(a)(3) and (8) of the Act require a description of the proposed postmining land use be "compatible with adjacent land use", and Section 508(a)(7) of the Act requires a timetable for each step in the reclamation plan.

These provisions of the Act demonstrate the Congressional intent that surface coal mining operations be well planned and coordinated before, during and after the actual conduct of operations. Section 786.19(j) enables the regulatory authority to insure that adjacent operations are worked in a coordinated manner, and not at cross-purposes to each other. This will help minimize adverse impacts on any other operation, the environment, or the public.

Related comments suggested that proposed Section 786.15(i) be revised to specify that the rules relate generally to consistency with land uses on adjacent property. This was not done because the issue of consistency with uses of adjacent land-use is separately addressed in Section 786.19(m), which cross-references to 30 CFR 816.133817.133. The latter Sections require consistency at 816.133(c)(1) and 817.133(d)(1).

In addition, these same commenters suggested that proposed Section 786.15(i) be revised to specify explicitly that operations on adjacent property be reasonably anticipated. This suggestion was not adopted by the Office. The text of the rule implicitly includes that it will not be invoked unless it is reasonable to expect that surface coal mining and reclamation operations will be conducted on adjacent land during the term of the permit involved. Therefore, the regulation was retained at final Section 786.19(j).

7. A commenter felt that proposed Section 786.15(k) should be revised so that all special demonstrations required in the permit application for operations on prime farmland be required findings under this Section. Since specific information and findings for such operations are required under final Section 785.17, the Office believes that it is unnecessary to repeat them in Part 786. However, for operations involving alluvial valley floors, the Office has added the requirement for a finding that the applicant has satisfied Section 785.19. Criteria for approval of other specific categories of mining are found in Part 785 of the regulations.

8. Two commenters felt that there was no justification in the Act for proposed Section 786.15(m). This Section requires a finding by the regulatory authority that all special approvals required by Subchapter K have been made. Sections 102(c) and 510(b) of the Act set forth the general requirement that surface mining operations not be conducted where reclamation as required by the Act is not feasible. In order to insure that this mandate is carried out, numerous facets of a proposed operation and reclamation plan require specific approval by the regulatory authority, as opposed to general approval of the whole permit. The finding made by the regulatory authority under this Section insures that the regulatory authority will perform a last check to make sure all such specific considerations and approvals have been completed. Because this requirement is essential to prevent damage to the environment caused by

practices which could render necessary reclamation not feasible, the regulation has been retained.

9. Section 786.19(o) was added to the regulations pursuant to consultation with the U.S. Fish and Wildlife Service (FWS) of the Department. In accordance with Section 7 of the Endangered Specials Act of 1973, and 50 CFR Part 402, the Office was required to consult with the FWS in regard to the Office's permanent program regulations.

This consultation resulted in the FWS making specific recommendations for modifications or additions to the proposed permanent regulations. These proposed changes were suggested in order to insure that the protection granted threatened or endangered species and critical habitat under the Endangered Species Act would be provided under the Office's permanent regulations. These recommendations were adopted, under authority of Sections 4 and 7 of the Endangered Species Act of 1973; 50 CFR Part 402; and Sections 102, 201, 501, 503, 504, 507, 508, 510, 515, 516, 517 and 522 of the Act.

§ 786.21 Criteria for permit approval or denial: Existing structures.

This Section has been added to the final rules in response to comments solicited at 43 *Fed. Reg.* 41735 (Sept. 18, 1978), regarding structures which exist prior to the approval of a State or Federal program in a particular State. As is explained in further detail in the preamble to Subchapter A, the Office has adopted final rules which authorize special treatment in the application of the requirements of Subchapter K to existing structures.

Existing structures are defined at Section 701.5 of the rules. Section 701.11(e) establishes the applicability of Subchapter K to those structures. Under Sections 780.12 and 784.12, the operation and reclamation plan portions of permit application will have to establish how the applicant will effect compliance with the applicability requirements of Section 701.11(e). Section 786.21 establishes the criteria by which the regulatory authority is to decide whether the applicant has made a sufficient demonstration that the proposed operations will be conducted in compliance with the applicability requirements of Section 701.11(e). The authority, basis and purpose for these criteria are discussed in the preamble to Section 701.11(e).

§ 786.23 Permit approval or denial actions.

Authority, purpose and basis for this Section are discussed in 43 F.R. 41726 (September 18, 1978), under Section 788.13:

1. Many commenters objected to the requirement in proposed Section 788.13(b)(1)(i) that all existing operations obtain new permits within eight months of the approval of a permanent regulatory program. Most commenters suggested that the regulatory authorities be given flexibility concerning when to issue new permits during the initiation of a regulatory program. Others suggested that the exception for new permits issued during the initial program found in Section 771.13 be expressly repeated in this Subsection.

Sections 506(a) and 502(d) of the Act require that the regulatory authority "grant or deny" a permit within eight months of approval of a State program. Therefore, suggestions that regulatory authorities be allowed more than eight months to grant or deny new permits must be rejected. However, Section 506(a) of the Act also allows operators with new permits issued in the initial program to continue operating under these permits past the eight month deadline, as long as they have made application for a permanent program permit. These requirements have been implemented by Section 771.13(b) of the regulations. Reference to Section 771.13 has been added to this Section in order that there be no confusion concerning time limits for actions on permit applications. To clarify the status of applications submitted after the two month deadline set forth in Section 771.13, new language has been added in Section 786.23(b)(1)(ii). All such late applications will be handled as applications submitted during subsequent operation of the permanent regulatory program under Section 786.23(b)(2). Therefore, an operator of an ongoing mine who is late in submitting his permanent program permit application runs the risk of having to cease operations, if a new permit is not issued eight months after the approval of the permanent program.

2. Several industry commenters suggested that there be further time limits placed upon regulatory authorities for processing permit applications under proposed Section 788.13(b)(1). Under that Section, the regulatory authority was to approve or disapprove a permit application within 60 days of the informal conference, or within a reasonable time if no informal conference is held. The informal conference is to be held within a reasonable time after a request for such a conference, pursuant to final Section 786.14. This means that a permit application for which no informal conference has been requested within approximately 60 days after submission of the application to the regulatory authority (four weeks of newspaper notice publication, plus 30 days comment period); would be processed in little more than the 60-day period. An application for which a conference has been held could be processed in as little as 80 days (four weeks of notice publication, plus 30 days comment period, plus 14 days notice of conference, plus a reasonable time for a decision).

No specific time limit has been set in the final rules. Alternatives suggested dealt with various specific times for the processing of applications. These times ranged from 60 days to six months. However, the present regulations expressly allow each regulatory authority to set its own maximum time limit depending upon the criteria of Section 786.23(b)(2)(ii). Because of the difference of the size, duration and types of mining in different States, and even between different permits within a State, the Office has determined that flexibility for the regulatory authority should be retained in the regulations. Therefore, comments suggesting that further specific time limits be set have not been accepted. It will be in the best interest of all parties to have expeditious processing of applications, but in those certain cases which require judicious consideration of the complex data required in applications, the regulatory authority should have as much flexibility as possible concerning time of processing.

3. One commenter was concerned that if an informal conference was held and it was later determined that a pattern of violations hearing was required on an application, that under Section 786.23(b)(3) there would not be enough time for the regulatory authority to consider other aspects of the application after a decision was rendered on the "pattern of violations" hearing. No change in the regulations was considered necessary. The regulatory authority would not be precluded from hearing and processing other aspects of the permit during the time that a "pattern of violations" hearing was conducted. Because of the time involved in such a hearing, the regulatory authority would have more time than usual to process the permit. In addition, the present regulations state that no time limit can expire during the pendency of pattern of violation hearing under Section 786.17(d).

4. A commenter asked that the regulatory authority be required to attach a fact sheet or finding of fact to its decision granting or denying permit applications under Sections 786.23(c) and 786.23(d). As proposed, the regulations required that the regulatory authority state the reason for its decision. The commenter was concerned that such broad language would lead to decisions filled with conclusory statements which would prevent meaningful review of those provisions. It was sug-

gested that the bases for the decision be set forth explicitly in the form of findings of fact or a "fact sheet", and that the proposed fact sheet be modeled after the proposed Environmental Protection Agency regulations to be found at 40 CFR 124.43, which call for such fact sheets on draft NPDES permits. The commenter was also concerned that previous State regulatory practice provided inadequate explanations for decisions on permit applications.

The Office believes that Section 786.23(c) already provides an adequate level of explanation for decisions. However, the wording of the regulation has been changed to require that the regulatory authority give its "specific" reasons for the decision. The form of the decision is not dictated by the regulations, however. Hopefully, this will strike a reasonable balance between the need for applicants and citizens to know the facts and reasons behind a regulatory decision, and the need of the regulatory authority for ease of administration. A regulatory authority should ordinarily list the specific facts and reasons behind each decision in order to limit the number of issues in any appeal.

5. Several industry commenters objected to public notice of regulatory authority decisions on permit applications. Some objected to sending the decision to anyone but the applicant and others to the publishing of a summary of the decision in a newspaper. Others objected to notification of the Office's Regional Director and local governmental units. Section 514(a)–(c) of the Act however, requires that the actual decision be sent to the applicant and all parties to the informal conference. Also Section 510(a) of the Act requires that notice be sent to local governments. Since the Office would still have enforcement responsibility under permanent State programs, it would be necessary for copies of all permits issued to be on file with the Office. In addition, under Section 514(c) of the Act, any person whose interests are or may be adversely affected by a decision on a permit application (regardless of their participation in the review of the application) has the right to file for administrative review of the decision by the regulatory authority. A newspaper advertisement would be essential in order to notify the public of the decision. Without this notice, adversely affected persons would lose their last opportunity to protect their rights because Section 514(f) of the Act limits the opportunity for judicial appeal to those who participated in the formal administrative hearing reviewing the decision of the regulatory authority. Therefore, newspaper notice provisions are also retained in the final rule.

§ 786.25 Permit terms.

The authority, basis and purpose of this Section was explained under Section 786.11 in 43 FR 41720 (Sept. 18, 1978):

1. Several commenters suggested that proposed Section 786.11(a)(2) be revised since a specified longer term may be needed to allow the applicant to obtain necessary financing for equipment and opening an operation. Section 506(b) of the Act states that a longer term may be granted ", . . if the applicant demonstrates that a specified longer term is reasonably needed to allow the applicant to obtain necessary financing for equipment and opening of the operation . . ." Based on this, Section 786.25 was revised in the final rule.

2. Additional commenters suggested that the need for confirming this financial need in writing was unwarranted. However, Section 506(b) of the Act provides that the applicant shall *demonstrate* that a longer term is needed. The Office has determined that confirmation in writing is the appropriate method to demonstrate that a longer fixed term is, in fact, needed. Therefore, this Section has been retained as proposed.

§ 786.27 Conditions of permits: General and right of entry.

The authority basis, and purpose for this Section was explained under Section 786.12 of 43 FR 41720 (September 18, 1978):

1. Several commenters contended that warrantless entries by State and Federal inspectors would contravene the Fourth Amendment to the U.S. Constitution and suggested that proposed 786.12 (b) be deleted. Based upon a review of the Act's legislative history and relevant case law, the Office has found warrantless entries by State and Federal inspectors to be lawful and proper under the Act. (*See, In Re Surface Mining Litigation*, 456 F. Supp. 1301, 1317-1319 (D.D.C., 1978).) The Office has determined that warrantless entries are necessary for proper administration and enforcement of the Act, and this Section was therefore retained in the final rules.

2. Other commenters suggested that Section 786.27(b) be revised so that entry to minesites was "at reasonable times." Section 517(b)(3) of the Act uses the term "at reasonable times" only when access to and copying of any records is necessary, or inspection of any monitoring equipment or method of operation is necessary. However, the Act does not state that the right of entry of authorized representatives be exercised only "at reasonable times." Entry at all times is needed to insure for effective compliance by on-going operations. As a result, the rule was not revised. A few commenters contended that all of paragraph (b) should be deleted, since the provisions of those Sections are stated in the Act or Subchapter L of the regulations. Since Section 786.25 deals with general conditions of permits as to right of entry and Subchapter L deals with the exercise of that right during inspections, the provisions were not deleted. However, subparagraphs (b)(1)(i)–(iii) of proposed Section 786.12 were deleted from Section 786.27, since they would be merely duplicative of Parts 840 and 842.

3. Several commenters stated that there was no authority under the Act for requiring accompaniment of State inspectors by private persons. Other commenters felt that Section 786.27 was too broad, because it did not specify in what instances a private citizen could accompany an inspector. Regarding citizen accompaniment of State inspectors, the Office decided not to change the final rule for the reasons explained in the preamble to Subchapter L. Commenters objecting to the breadth of the proposed rule were, however, correct, in objecting that it was not limited to citizens who had made a complaint to the regulatory authority. Thus, Section 786.27(b)(2) was revised to state that a person may accompany an authorized representative on an inspection when the inspection is in response to an alleged violation reported to the Office by that person.

4. A few commenters contended that revisions should be made to Section 786.27(b) to assure that (1) private persons are properly attired with safety apparel upon entrance to a minesite and (2) all private persons entering a minesite would be required to waive all claims against the operator for injuries received while on the property. These suggestions were not accepted. It has been the Office policy that all inspectors be properly attired with proper safety apparel before entering a minesite. Also, private persons entering a minesite must be under the control, direction, and supervision of the authorized representative. As a result, an authorized representative would not allow a private person to enter a minesite, unless he or she was properly attired with safety apparel. As for the liability question, ordinary tort law principles can be used and some States may have specific laws or regulations with regard to liability. See also discussion of this issue in the preamble to Part 842. Therefore, no change was made in the regulations as a result of this comment.

§ 786.29 Conditions of permits: Environment, public health and safety.

The statutory authority, basis and purpose for this Section was explained under Section 786.13 at 43 FR 41721 (September 18, 1978):

1. A few commenters requested that the entire Section 786.29 be deleted as having no justification. This Section, like Sections 786.25 and 786.27 sets forth general terms and conditions to be attached to all permits as well as special conditions to be attached to certain types of permits. Subsection (a) places affirmative responsibilities on operators to report and remedy events of noncompliance. Subsection (b) places affirmative responsibilities on operators to dispose of materials produced by pollution control devices in an environmentally acceptable manner. Subsection (c) allows the regulatory authority to place special conditions on permits in order to protect the environment in situations not specifically handled in the regulations. The Office feels this Section is necessary to carry out the environmental protection purposes of the Act found in Section 102 (a) and (d), and retained it in the final rules.

2. Another commenter suggested that a new Subsection be added to allow the permittee 15 days to revise any conditions attached to a permit and comment on them. This suggestion was rejected because an addition is unnecessary. If a permittee is dissatisfied with any conditions, he or she can appeal the decision of the regulatory authority under Section 787.11.

3. Several commenters state that warning a person who may be adversely affected by noncompliance, as required by Subsection (a)(3), would be an unnecessary burden to the operator. These commenters recommended that the provision be deleted. They felt the operator should not have to worry about who *may* be adversely affected in noncompliance situations which quite obviously do not threaten the health or safety of the public.

This Subsection has not been deleted, however. One of the purposes of the Act is to protect society and the environment from the adverse effects of surface coal mining operations. Section 786.29(a)(3) helps assure that this provision of the Act is implemented. A few commenters also suggested that this Section be re-worded for clarification. This was done to narrow the rule so that it now states ". . . any person whose health and safety is in imminent danger due to noncompliance." This revision implements the wording "imminent danger to health and safety to the public" which is defined in Section 701.5 of the regulations.

4. One commenter recommended deletion of Section 786.29(b) as unnecessary and outside the scope of the Act. It was the commenter's position that the requirements of Subsection (b) were already being administered under the Clean Water Act. The Office believes, however, that the requirements in Subsection (b) in no way supersede or modify the Clean Water Act and will help insure that the goals of both that Act and SMCRA will be met. Therefore, the regulations have not been changed.

5. Several commenters objected to Section 786.29 (c) as being vague and not required by the Act. This Subsection allows the regulatory authority to attach special permit conditions. The Office considers this authority a critical element for any rational regulatory system. The performance standards of the regulations contain dozens of provisions which establish generally applicable rules, but provide for regulatory authority approval of "alternative" ways to comply with the performance standards. The determination of whether and to what extent an alternative should be authorized will require a specific written regulatory decision, so that the agency, operator, and public will clearly understand what specific legal requirements are being applied to the operator. Further, these specific determinations need to be reflected in the permit to be binding and enforceable, since the enforcement provisions of the Act speak of violation of permits.

This authority is also necessary since there will invariably arise situations where the proposed operations have the potential to cause adverse environmental impacts, but the solutions for these problems are not specifically given by the regulations or Section 515 of the Act. Indeed, Congress recognized this problem by requiring the issuance of cessation orders for "significant, imminent environmental harms," but that provision only deals with ongoing operations, not prevention of such harms which can be identified during the permit process. Because the Office believes the regulations should, to the extent practical, ensure that potential problems raised by proposed operations be adequately handled in the permit phase, the authority of regulatory authorities to impose special conditions has been retained. However, in order to clarify the situations in which these special conditions may be added, the language of the regulations has been changed to specify that they may be imposed to prevent environmental harms and to ensure compliance when alternative methods of meeting the performance standards of the Act.

PART 787—ADMINISTRATIVE AND JUDICIAL REVIEW OF DECISIONS BY REGULATORY AUTHORITY ON PERMIT APPLICATIONS

Part 787 was Part 789 in the proposed regulations.

§ 787.11 Administrative review.

Authority, purpose and basis for this section are discussed in 43 FR 41727, (Sept. 18, 1978). As proposed, 787.11 concerned the procedures to be followed by a regulatory authority at the adjudicatory hearing to review the decision on the approval or denial of a permit application. Sections 514(c), (d) and (e) of the Act set forth the minimum procedural requirements for adjudicatory hearings on permit actions. The proposed regulations basically repeated the language of these sections. In the preamble to the proposed regulations, the Office solicited comments on whether more specific procedural requirements should be adopted.

1. Some commenters pointed out differences between Federal, State and Federal lands programs, but suggested that the procedures for each program be as close as possible for consistency's sake. Two commenters wanted to be sure that an Admininstrative Law Judge would hear appeals under Federal programs. Some commenters recommended that the following specific additional procedural requirements be included: (a) Final decisions in a hearing should include findings of fact and conclusions of law and a "fact sheet" similar to that required under USEPA's National Pollutant Discharge Elimination System (NPDES) permit regulations; (b) Specification of a "presiding officer," who would have the power to administer oaths, issue subpoenas, rule on evidence, regulate the hearing, hold prehearing conferences and make recommended decisions; (c) Provide for a right to present oral or documentary evidence, and cross-examine witnesses; (d) Provide for the right of the parties to submit proposed findings of fact and conclusions of law at the end of the hearing; (e) Prohibit *ex parte* contacts between persons deciding hearings and parties to proceedings which include the staff of the regulatory authority; and (f) Include provisions to ensure that an informal conference under Section 786.14 is an adjudicatory hearing.

2. The Office has decided to adopt the suggestion that Section 787.11 distinguish between adjudicatory hearings for Federal, State and Federal lands programs, because of the statutory and institutional differences between the three programs.

3. Regarding State programs, the Office has decided to accept the suggestion that the regulations be modified to specify that, in addition to the

procedural devices specifically enumerated in Section 514 (c) and (e) of the Act, the adjudicatory hearing must provide for right to prehearing discovery and for decision of the regulatory authority to be in the form of findings of fact and conclusions of law.

Specification of discovery rights is particularly necessary, as commenters pointed out, in preparing for the complex, site-specific technical issues involved in coal mining permit hearings. Furthermore, discovery is implicit in the specifications of Section 514(e) of the Act which allows the regulatory authority to subpoena witnesses or other evidence. Discovery merely ensures that this subpoena power can be exercised prior to the hearing in order to provide rational fact finding and assist the parties in evaluating settlement possibilities.

Findings of fact and conclusions of law are required as a matter of due process in adjudicatory hearings. Further, as commenters pointed out, judicial review (provided for in Section 514(f) of the Act) is impossible unless adjudicatory hearing decisions are accompanied by specific reasons for the decisions.

4. One commenter suggested that Section 787.11 be modified to state specifically which party has the burden of proof in the administrative hearing. The Office accepted this comment for nation-wide consistency, and Section 787.11(b)(5) was inserted to place the burden on the party seeking to reverse the decision of the regulatory authority in accordance with general principles of administrative law.

5. The Office has decided not to require that an adjudicatory hearing decision be accompanied by a "fact sheet," since the findings of fact and conclusions of law provision is adequate to insure that the hearing decision explains in detail the rationale of the regulatory authority. The Office has also decided not to require the State program hearings be conducted by a particular "presiding officer," since the States may have hearing bodies with a panel of decision makers, thereby rendering the "presiding officer" concept irrelevant. Also, the State programs need not necessarily require the right to present oral testimony in all cases, as the constitutional guarantee of due process may be statisfied by written submission of evidence, so long as an adequate oppportunity to respond is allowed. See, e.g., 5 U.S.C. Sections 554, 556, and 557.

6. Regarding the prohibition on *ex parte* contacts, due process does not prohibit all *ex parte* contacts, such as between a presiding examiner and the head of an agency. However, *ex parte* contacts between representatives of parties and the decision maker of the hearing are prohibited. See e.g., 5 U.S.C. Sections 554(d), 556, and 557. Therefore, *ex parte* contacts between the hearing authority and any of the parties before it is prohibited. This does not preclude, of course, meetings between only the parties themselves.

7. The Office has decided not to require that informal conferences under Section 513 of the Act and Section 786.14 of the rules be governed by rules applicable to formal adjudicatory hearings, since Congress clearly intended those to be truly informal. Compare *In re: Surface Mining Regulation Litigation*, 456 F. Supp. 1301, 1322 (D.D.C. 1978).

8. Federal programs and the Federal lands program will, in general, be governed by procedures required by 5 U.S.C. Section 554 and rules of the Department's Office of Hearings and Appeals (43 CFR Part 4). Rules for that Office, which were promulgated recently, have reserved space for proceedings on permit matters under the Act. Accordingly, consideration of what specific provisions should be required for these matters will be made in the process of proposing and promulgating amendments to 43 CFR Part 4.

9. To ensure that the right to a 5 U.S.C. Section 554 hearing required by Section 514(c) of the Act is afforded under Federal lands programs, appeals from the initial decision of the Department to either grant or deny a permit on Federal lands will be made directly to the Department's Office of Hearings and Appeals. See Section 787.11(c). Proceedings before the Office will be governed by rules supplementing 43 CFR Part 4.

10. As is discussed in the preamble to Section 786.14, the Office accepted comments suggesting that the right to an adjudicatory hearing be provided with respect to decisions of regulatory authorities to approve or disapprove applications to conduct coal exploration in which more than 250 tons of coal is to be removed in any one location. This was done by cross-referencing to Section 787.11. Appropriate revisions were also made to Section 787.11 to include these appeals within its scope. Similarly, the requirements of Section 787.11 have also been made applicable, as suggested by commenters, to Section 786.17(d) hearings, Section 788.11 hearings, and to review of the decision of the regulatory authority under Sections 788.17–788.19.

11. Some commenters objected to the provision of proposed Section 789.11(c)(4). One objected that it should not be applied to existing operations, while another argued that it should be equally applicable to requests for stays of permit issuances. The Office has not modified this provision in the final rules which appears at Section 787.11(b)(2)(iv). There is no basis in the Act to distinguish between existing and new operations as to this condition on the grant of temporary relief. Either should be authorized to be conducted only upon a clear demonstration that reclamation will be feasible, which is not appropriately determined in a preliminary relief hearing, as was explained in the preamble to the proposed rules. Moreover, existing operations will not have held permanent regulatory program permits, so there will be no status quo to be restored by temporary relief. The Office also feels the provision is not inequitable. Where persons seek temporary relief to stay the approval of a permit, there is a status quo (e.g. no permit) which can be restored.

§ 787.12 Judicial review.

The authority, basis, and purpose for this section were explained at 43 FR 41728 (September 18, 1978), under Section 789.12. The rule was modified to clarify that it also applies to Federal lands programs under authority of Section 526(a)(2) of the Act.

PART 788—PERMIT REVIEWS, REVISIONS, AND RENEWALS: AND TRANSFER, SALE AND ASSIGNMENT OF RIGHTS GRANTED UNDER PERMITS

In order that all permit actions taken subsequent to the granting of a permit could be found in one location, to condense the size of the regulations, and to minimize cross-referencing, proposed Parts 790, 791 and 792 have been combined into one new Part 788. Because of this combination, editorial changes have been made in Sections 788.1 and 788.2.

§ 788.1 Scope.

Authority, basis and purpose are discussed in 43 *Fed. Reg.* 41728 (Sept. 18, 1978), under Parts 790, 791, and 792.

§ 788.2 Objectives.

Authority, basis and purpose are discussed in 43 *Fed. Reg.* 41728 (Sept. 18, 1978), under Parts 790, 791, and 792.

§ 788.3 Responsibilities.

Authority for this section is found in sections 102, 201(c), 501(b), 503(a), 504, 506, 507, 508, 509, 510, 511, 513, 514, 515, 516, 517, and 701 of the Act. Because of the combination of three parts into new Part 788, a new Section 788.3 has been added which sets forth, first, the responsibilities of regulatory authorities in taking permit actions subsequent to the granting of the original permit under regulatory programs. This section also specifies the responsibilities of persons conducting surface coal mining and reclamation

operations with respect to changes, modifications, renewals, and revisions of permits after they are originally granted, and of persons who attempt to succeed to rights granted under permits by transfer, sale, or assignment of rights. This section has been added as an aid to users of the regulations and does not establish any responsibilities which were not included in proposed Part 790, 791, or 792.

§ 788.5 Definitions.

Authority for this section is sections 102, 201(c), 501(b), 503, 504, 506, 507, 508(a), 509, 510, 511(b), 515, 516, 517, and 519 of the Act.

In response to a comment directed to proposed section 792.12(a) (788.18(a) in the final rules), the office has added definitions for the terms "successor in interest" and "transfer, assignment, or sales of rights." The commenter was concerned that actual transfers of effective control would not necessarily be subject to prior regulatory authority review and approval, if these terms were not specifically defined. As defined, these terms will include any change in ownership or in the person actually exercising the rights to mine. For example, these terms would include all subcontractors who actually perform the mining who were not listed in the original application pursuant to Sections 788.13(a)(5), 783.13(a)(5) and 778.14, 783.14. This is necessary so that the regulatory authority can determine the suitability of the person actually conducting the surface coal mining and reclamation operations involved under the substantive criteria of 788.17–788.18.

The definition of successor-in-interest is provided to insure for consistency with use of the term "transfer sale, or assignement of rights" within the same or similar context in those sections. The definition of "transfer, sale or assignment of rights" is based on the common understanding of those terms to include any effective shift in control over rights, in addition to technical changes in ownership. *See Black's Law Dictionary* at 153, 1669 (1957 ed.).

§ 788.11 Regulatory authority review of outstanding permits.

Authority, purpose, and basis for this section are discussed in 43 *Fed. Reg.* 41728 (Sept. 18, 1978) under section 790.11.

1. Under Section 511 (c) of the Act, the regulatory authority is to review each permit at least once during its term. Following this review, the regulatory authority is authorized to revise or modify the permit, to assure compliance by the permittee with the Act. Similar, but particularized review, revision, and modification power is provided to the regulatory authority for certain special categories of mining by Section 515(b)(16), 515(c) and 515(e) of the Act. Section 788.11 is proposed to generally implement these requirements, along with similar provisions for the special categories of mining at Section 785.13, 785.16 and 785.18 of this Subchapter.

2. Several commenters suggested that this section be modified to allow the regulatory authority to revoke a permit through the review process. These comments were rejected. Section 511(c) of the Act allows the regulatory authority to require "Reasonable revision or modification of the permit provisions," during the review process. Sufficient mechanism is provided in other sections of the regulations for the revocation of a permit (*See* Subchapter L).

3. Many commenters suggested that modifications be made to this section to allow citizens to petition the regulatory authority to conduct reviews of existing permits. The regulatory authority has plenary power under the Act and regulations to deal with the overall plans and operations during review of the permit application, the mid-term review, and the renewal process. In addition, it can order cessation of an operation at any time for any imminent harms or hazards created by the operation. (See Subchapter L). Therefore, the right to petition for review was considered unnecessary to protect citizen's rights. Concerned citizens can also file citizen's complaints and participate in the review and renewal process.

4. A commenter requested that public notice and opportunity to submit comments be added to this section. The Office rejected this suggestion. If citizens believe that an operation is in violation of the Act or regulations, or is creating danger to the public or the environment, they can file complaints with the regulatory authority or OSM under Subchapter L. In investigating the complaint, the regulatory authority will necessarily review the past performance of the operation. Moreover, during the periodic review, the regulatory authority will have to consider complaints which have been filed against the operations.

5. A commenter objected to the office setting times for permit reviews as per proposed Section 788.11(a), citing Section 511(c) of the Act as leaving this issue entirely to the regulatory authority. The commenter suggested modification of this section to delete references to Sections 785.15, 785.16, and 785.18, and to delete the requirement that all permits be reviewed not later than the middle of the permit term, except those permits governed by Section 785.13.

This comment was rejected. Section 788.11(a) is within the authority granted the Secretary, acting through the office, pursuant to Sections 102, 201, 501(b) and 503(a) of the Act, to establish guidelines for the State programs.

6. Some commenters suggested that where permits are issued for terms of longer than five years under Section 786.25(a), regulatory authority review of the permit should occur more frequently than once in the term of the permit. The Office agreed with that suggestion. Where permits extend beyond 5 year terms, mining and reclamation technology advances should be considered for application on recurring intervals. Moreover, care is needed to insure that the predictions of successful reclamation accepted when the original permit was issued remain valid. Therefore, the final rule was revised to require that long-term permits be reviewed at least once each 5 years, the ordinary length of a permit term.

7. Some commenters questioned the criteria for notice and opportunity for hearing or orders of the regulatory authority requiring modification or revisions to permits following review. This matter was clarified by cross-referencing Section 788.11 in the final rules to 30 CFR 787, which provides detailed hearing criteria.

§ 788.12 Permit revisions.

Authority, purpose, and basis for this section are discussed in 43 *Fed. Reg.* 41728 (Sept. 18, 1978), under Section 790.12.

1. Under Section 511(a) of the Act, a permittee may apply for a permit revision during the term of its permit, by filing an application together with a revised reclamation plan. Under Section 511(a)(2) of the Act, however, those revisions are not to be used to extend the area of operation beyond the original permit area, except for incidental boundary revisions. Section 788.12 implements those provisions of the Act.

2. A commenter suggested that Section 788.12(b)(1) be modified to require a permit revision only for "substantial" changes in the methods of coal mining or reclamation operations. The commenter recommended that this be when these changes would constitute a significant departure from the methods of mining and reclamation contemplated by the original permit. The commenter reasoned that mining and reclamation plans would always be fluid to some extent, and that changes in the methods of operations or reclamation which were consistent with the basic plans approved in the permit application should not require a permit revision.

The Office agreed and, accordingly, Section 788.12(b)(1) was modified in the final rules. Additional language

was also incorporated to ensure that each regulatory authority will provide parameters in their regulations to determine what changes in the methods of operations or reclamation constitute a significant departure from those approved in the original permit and, therefore, necessitate a revision.

3. A commenter requested that Section 788.12(c)(2) be revised to include a definition of the term "significant alteration," and to exempt operators from complying with the requirements contained in Section 788.12(c)(2) for a permit revision required by an order issued under 30 CFR 788.11. The commenter's rationale for these requests was as follows:

(a) Certain changes in the mine operations might be "significant," but would have no effect on public safety or the environment that had not already been reviewed by the regulatory authority.

(b) Mine operators should not be subject to the notice and hearing requirements of Parts 786 and 787 when the permit revision is required by the regulatory authority under Section 788.11, particularly when the contents of the applications for a revised permit may be specified by the regulatory authority.

(c) The revision order itself may have followed public participation through petition, hearings, or complaints.

The basic request of this commenter was rejected for the following reasons: First, the wording of Section 788.12(c)(2) closely tracks that of the Act in Section 511(a)(2) under "Revision of Permits." Section 511(c) of the Act requires that revision or modification of a permit required by the regulatory authority (based on written findings) be subject to notice and hearing requirements established by the State or Federal program. Thus, the operator cannot be exempted from the requirements of Parts 786 and 787.

While the comment was rejected, the rationale supporting the comment indicated that modification of Section 788.11 needed further consideration. Under Section 788.11(c), the regulatory authority may, by order, "require reasonable revisions or modifications of the permit provisions . . . ," subject to notice and hearing requirements. In effect, the regulatory authority could have subjected an operator to these potentially expensive and time consuming requirements with no avenue of appeal regarding the "reasonableness" of the ordered revisions being open to the operator. Accordingly, the regulations were revised to provide the operator with a procedure whereby any order issued by the regulatory authority under this section would be subject to a hearing process. The necessary language to provide this process is incorporated in Section 788.12(c)(2).

4. A commenter suggested a complete rewording of paragraph (c) of the proposed rule to use only the language of the last sentence of Section 511(a)(2) of the Act. The Office rejected this for the following reasons:

(a) The commenter argued that proposed Section 788.12(c) was unauthorized under the Act. However, Congress did not limit OSM to merely repeating the language of the Act. *See* Sections 102(a) and 503(a) of the Act. The provisions of 788.12(c) are authorized under Sections 102 (a)–(d), (k), (m), 501(b), 503(a), 506–508, 510, and 511, to ensure that applications for revisions of permits contain sufficient information and are subject to public participation, so that revised operations are first proven to provide for feasible reclamation. Further, OSM is not prohibited from providing guidelines for State programs, as Sections 501(b) and 503(a) of the Act clearly contemplate that OSM would adopt such regulations. Indeed, these regulations are necessary to ensure that the States generally provide even-handed treatment among operations on revision requests and that the States require sufficient information in revision applications.

(b) The commenter also asserted that OSM may not require applications for revisions to extend beyond changes in the reclamation plan. This is without merit. First, Section 511(a)(1) of the Act authorizes requiring applications for a revision of the permit, together with a revised reclamation plan to be filed with the regulatory authority. Second, Section 511(a)(2) authorizes the establishment of guidelines as to "all permit application information requirements and procedures. . . ." Third, Section 510 (a) and (b) prohibit issuances of revisions of permits, unless supported by a complete application. Thus, the Act clearly requires that regulations under the Act ensure that all relevant aspects of the permit application be appropriately revised prior to approval by the regulatory authority of a revised permit.

5. A commenter suggested deletion of paragraph (e) of the proposed rule, on the basis that the material covered there was also included in Section 788.12(a) and was, therefore, redundant. This comment was rejected. Paragraph (e) was not clearly included in the provisions of proposed paragraph (a); further, this section is grounded directly in Section 511(a)(3) of the Act and should, therefore, be clearly stated in the regulations.

6. Some editorial changes were made to eliminate redundancy and ambiguity. Paragraphs (a) and (b) of the proposed rule covered essentially the same material; that is, when a revision should be obtained. They were combined into one paragraph in the final rule. Section 790.12(b)(4) referred to "State" programs only in the proposed rule. However, proposed Section 790.1 indicated that all sections of 790 applied to both State and Federal programs (e.g. "regulatory programs"). An appropriate change was made to the final rule. Paragraph (c) of the proposed rule did not specify that the permit application was to be "complete." As discussed in the preamble to 30 CFR 786.11, the Office accepted comments suggesting that the permit rules be generally revised to specify that time limits for application reviews and public participation run only from the submission of "complete" applications to the regulatory authority. Because permit revisions will also be subject to time constraints and public participation in the review of applications, Section 788.12 was modified in a manner similar to 786.11.

§ 788.13 Permit renewals: general requirements.

Authority, purpose and basis for this section are discussed in 43 *Fed. Reg.* 41728 (Sept. 18, 1978). under Section 791.11.

1. Section 788.13 has been changed from its proposed form in Section 791.11, in order to accommodate the change in organization of Parts 790, 791, and 792, and to clarify procedures relating to permit renewals which seek to extend the boundaries of the original permit. Under paragraph (a) of the final rule, permit renewals are only available for those portions of the mine plan area which were approved as being within the boundaries of the initial permit area when the permit was first issued by the regulatory authority. This clarifies the confusion expressed by many commenters as to the relationship between and differing effects of the forms "permit area" and "mine plan area." It also reflects Congressional intention that permit renewals not be used by the operator to avoid making the detailed demonstration to the regulatory authority that proposed operations will be conducted to comply with the Act and regulatory program provisions wherever those operations are conducted or located. *See* H.R. Rept. No. 95-218, 95th Cong., 1st Sess. at 92 (1977).

2. Paragraph (b) of the final rules provides standards for disposition of portions of applications that cover parts of the mine plan area that were not within the permit area approved under the permit for which renewal is being sought. These are to be treated as application for new permits under Section 788.14(b)(2).

§ 788.14 Application for renewals.

Authority, basis and purpose of this section are found at 43 *Fed. Reg.* 41728 (September 18, 1978), under section 791.12.

1. Several commenters objected to the public participation provisions found in Section 788.14 for the permit renewal process. Section 506(d) of the Act states that renewals of permits are subject to the public notice requirements of sections 513 and 514 of the Act. These sections of the Act are implemented by Sections 786.11, 786.12, 786.13 and 786.14 of the final regulations. However, the proposed rule made reference only to the requirement for newspaper notice, and not to opportunities for objections, comments, and informal conferences on the application.

Some commenters thought that the newspaper advertisement of permit application requirement should be deleted as unreasonable, while others thought that the public notice requirements were meaningless, without inclusion of the rights to public participation set forth in Sections 513 and 514 of the Act. It was obviously the intent of the Act to encourage public participation throughout the permit process. (See Section 102(i) of the Act). Section 506(d) of the Act contemplates public participation at some type of proceeding, by stating that the burden of proof shall be on the opponents of renewal of permits.

Given that Section 514 of the Act concerns public notice of regulatory decisions after informal conference, and with adjudicatory hearings thereafter, it was decided that Sections 786.11, 786.12, 786.13 and 786.14 should apply to the renewal process. Therefore, the final rule has been changed to require compliance with all these sections. This will give citizens the right to file objections and requests for informal conferences concerning permit renewals. The wording of the section has also been changed to make it clear that the right to administrative and judicial review exists for decisions on permit renewals, which will protect both the permittee and the public.

2. A commenter suggested stipulating that proof of publication of the newspaper advertisement of the permit application should not be a factor in determining the completeness of an application for permit renewal. As discussed above, it has been determined that full public notice and participation requirements will apply to permit renewal actions. The submission of proof of publication to the regulatory authority is necessary, in order to demonstrate that the required notice has been given.

3. Also suggested was an addition to this section allowing an operation to continue under the terms of the old permit, should the application for renewal be contested beyond the term of the old permit. This suggestion was rejected. Section 771.21(b)(2) of the regulations requires that applications for renewal be submitted at least 120 days prior to expiration of the permit involved, which should be ample time in which to process renewal applications. Section 506(d) of the Act and 30 CFR 788.16 state that an operation shall have the right of successive renewal, unless the regulatory authority makes certain findings. If these findings are not made, the permittee could continue mining past the term of the original permit, even if the decision of the regulatory authority was contested by opponents of renewal. However, if the regulatory authority found that the permit should not be renewed, and the original term of the permit expired during an appeal, the operator should not be able to continue to operate under the Act. See Sections 102, and 510(b) of the Act.

4. A few commenters suggested that the permit renewal applications be required to be "complete." As discussed in the preamble to Section 786.11 of the regulations, the Office has decided to require complete application for permit renewals, so the comments were accepted.

§ 788.15 Terms of renewals.

1. Authority, purpose and basis of this section are discussed in 43 *Fed. Reg.* 41728 (Sept. 18, 1978), under Section 791.13. Under Section 506(d)(3) of the Act, renewals are not to be granted for a term in excess of that authorized by the Act for the original permit. Section 506(b) of the Act and 30 CFR 786.25 provide for maximum permit terms. Section 788.15 implements those provisions for permit renewals.

2. Several commenters objected to the proposed rule, on the grounds that it limited permit renewals to a maximum period of 5 years. Proposed section 786.11, however, did not limit permits to a 5-year maximum term; under certain specified conditions a longer fixed term permit may be granted. See 30 CFR 786.25(a). Further, Section 506(d)(3) of the Act specifically states that the renewal shall not exceed the term of the original permit. The comments were, therefore, accepted. Section 788.15 was modified to track the language of the Act.

§ 788.16 Approval or denial of renewals.

Authority, purpose and basis for this section are discussed in 43 *Fed. Reg.* 41728 (Sept. 18, 1978), under Section 791.14.

1. The criteria for determining whether an application for renewal of a permit should be granted are provided for in Section 506(d)(1) of the Act, together with provision for establishing the burden of proof in that determination. Section 788.16 implements those provisions of the Act.

2. Several commenters suggested that the regulatory authority be required to approve or deny a permit application within a specified period of time. These comments were rejected. Section 510 of the Act clearly states that "the regulatory authority shall grant, require modification of, or deny the application for a permit *in a reasonable time set by the regulatory authority . . .*" (emphasis added). The legislative history suggests that the intent of Congress was not for the Office to fix a specific time for action by the regulatory authority, but to allow State regulatory authorities to determine specific decision times at their own discretion.

§ 788.17 Transfer, sale or assignment of rights granted under permit: General requirements.

Authority, purpose and basis for this section are discussed in 43 *Fed. Reg.* 41728 et seq. (Sept. 18, 1978), under Part 792.

1. Section 788.17 sets forth the requirement for written regulatory authority approval prior to any transfer, assignment, or sale of permit rights. Section 788.18 contains the procedures for obtaining such approval, and Section 788.19 establishes under what circumstances a successor-in-interest will be required to get a new permit. Subsections (b)(1) and (2) of proposed Section 792.11 and (2) have been deleted in the final rule as duplicative of revised Section 788.18 and new Section 788.19 which is discussed below.

2. A commenter contended that the concept of "prior written approval" regarding transfer, sale, or assignment of permit rights was beyond the authority of the Act. The suggestion was rejected. Sections 102, 201(c)(2), 501(b), 503(a), 504, 506, 510, and 511(b) of the Act provide adequate authority for the regulations concerned and the concept of prior written approval. See the discussion at 43 *Fed. Reg.* 41728–41729 (Sept. 18, 1978).

3. A few commenters contended that revision of permits should not be required where only the transfer of ownership from one entity to another is involved. These comments were accepted. As discussed in the preamble to the proposed rule, the Office felt that revision of permits and the need to apply for a new permit need not occur on every transfer of ownership, so long as the successor agrees to operate by all the terms and conditions of the original permittee. Should the successor change or attempt to change the method of mining or reclamation operations or the terms or conditions of the permit, an application for a new

or revised permit would be required. Authority for this is provided by Sections 102, 506, and 511 of the Act. These comments have been further addressed by the addition of Section 788.19.

§ 788.18 Obtaining approval for transfer, assignment or sale of rights.

Authority, purpose and basis for this section are discussed in 43 *Fed. Reg.* 41729 (Sept. 18, 1978), under Section 792.12.

1. A commenter suggested that the proposed Section 792.12(a)(1) (now included as Section 788.18(a)(1)) be revised to allow that, in the event of a permit transfer, the new permittee should be required to post a new bond, at which time the bond of the original permittee should be released. In support, it was said that it would be very unlikely for a surety company to consent to the transfer of its bond to a new permittee. This suggestion was rejected, as it was determined that such a release of the original permittee's bond would not always be desirable, if complete reclamation has not occurred or the successor is unwilling to assume all reclamation responsibilities of the original permittee.

Section 506(b) of the Act requires a successor-in-interest to "obtain the bond coverage of the original permittee." It was, therefore, decided in light of the foregoing comment, to clarify the regulations to show that the intent was for the successor to obtain equivalent bond protection. In obtaining equivalent coverage, the successor would have several options, including that of obtaining the bond coverage of the original permittee. Accordingly, the proposed regulations were revised by adding subsections 788.18(a)(1)(i)–(iv) to the final rules.

2. A commenter suggested that the provisions of this section be expanded to cover the possibility that a permit could be effectively transferred by outright purchase of the permit holder, or by some other method of gaining effective control of the permit holder. As Section 511(b) of the Act specifically prohibits the transfer, assignment, or sale of rights granted under a permit without the written consent of the regulatory authority, the regulations were revised. Definitions of terms "succesor-in-interest," and "transfer, assignment, or sale of rights," have been included in new Section 788.5 and are discussed in the preamble to that section.

3. Several comments were received objecting to the contents of the application for approval required under the proposed rule. Commenters contended that a potential succesor-in-interest to the rights granted under a permit should only have to agree to abide by the terms of the original permit and show adequate financial responsibility. One asserted that an assignee of a coal property which is covered by a permit should not be subjected to a detailed permitting process, as long as the assignee is prepared to furnish the required bond. Some commenters requested that the requirements for information in Section 788.18(a)(2)(iii) be deleted, as this information would have been supplied by the original permittee.

These suggestions were all rejected, because the permit application requirements of Sections 102, 507, and 510 of the Act specifically require the applicant to provide a variety of specific and detailed information to the regulatory authority, on the nature of the person conducting operations. Approval of a permit application depends on more than the financial stability of the applicant, e.g. information regarding the past performance and character of the operator is required by Section 510(c) of the Act. The clear intent of those sections of the Act is to provide the regulatory authority with sufficient information to accurately assess both the applicant and the proposed field operations prior to issuing a permit. Thus, a successor-in-interest to a permittee should be subjected to the appropriate permit application requirements of the regulatory authority.

4. Several commenters objected to the requirement in subsection 788.18(b) that a transferee of a permit place a new newspaper advertisement notifying the public of his application for approval of the transfer. In determining whether to grant an application for approval of transfer, it is necessary that the regulatory authority conduct an evaluation of the prospective successor-in-interest to ascertain whether he or she will have the legal and financial capabilities required by the Act to carry out the plan, as well as his or her past history as an operator. An integral part of this process is the solicitation of comments from the public on the plan and the operator since public comments will help in determining an operator's past history of compliance with the Act. (*See* Sections 102(i), 513, and 514 of the Act.) For these reasons, the public notice requirement has been retained in the final rule.

5. Several commenters suggested modifying the proposed rule, to limit the right to submit written comments to any person whose interests are or may be adversely affected by a decision of the regulatory authority. This suggestion was adopted, to align section 788.18 with the wording of Section 513(b) of the Act.

§ 788.19 Requirements for new permits for persons succeeding to rights granted under a permit.

1. Authority for this section is 102, 201(c), 501(b), 503, 504, 506, 507, 508, 509, 510, 511, 513, 514, 515, 517, 519 and 522(e) of the Act. Under 506(b) of the Act, persons succeeding to rights under an existing permit must file an application within 30 days of that succession for a new permit. Section 788.19 implements that section as interpreted by the Office, by requiring persons seeking approval under Sections 788.17 and 788.18 to obtain a new or revised permit from the regulatory authority, if the operations are to be changed from those contemplated under the original permit or extended outside the original permit area. See 43 *Fed. Reg.* 41728–41729 (Sept. 18, 1978).

2. A commenter suggested revising proposed Section 792.11(b)(1) (now included in Section 788.19) to delete the references to Sections 792.12(c)(2), and 771.19(b)(3), and insert a time requirement of 30 days to apply for a new permit. This request was based on the commenter's interpretation that 506(b) of the Act explicitly requires a successor-in-interest to a permittee to obtain bond coverage for the area and file an application for a new permit within 30 days.

The Office does not agree that 506(b) of the Act requires every successor-in-interest to obtain a new permit. As stated in the preamble for 788.17, a new permit is required only if the successor wishes to either change the method of operation from that contemplated under the original permit, or to expand the operations to areas outside those authorized by the original permit.

SUBCHAPTER J—BOND AND INSURANCE REQUIREMENTS FOR SURFACE COAL MINING AND RECLAMATION OPERATIONS

This Subchapter establishes the minimum requirements for the Secretary's approval of that portion of a regulatory program governing performance bonds and liability insurance in accordance with Sections 102, 201, 501, 503, 504, 507(f), 509, 510, 519 and 701(17) of the Act. These include requirements governing the amount of liability under a performance bond, adjustments in the amount of liability, the duration, form, terms and conditions of the bond, procedures and criteria for the release of bond liability under a permit, and criteria for forfeiture of the bond.

PART 800—GENERAL REQUIREMENTS FOR BONDING OF SURFACE COAL MINING AND RECLAMATION OPERATIONS UNDER REGULATORY PROGRAMS

Part 800 establishes general requirements for bonding and liability insurance imposed on permit applicants as conditions precedent to the issuance by the Regulatory Authority of new, revised, or renewed permits to conduct surface coal mining and reclamation operations.

§ 800.5 Definitions.

1. Section 800.5 includes nineteen definitions. These definitions should aid in the interpretation and clarification of bonding requirements. The definition of a *collateral bond* has been changed to include the irrevocable letter of credit concept. Although a "letter of credit" as defined by the Uniform Commercial Code does not fall within the traditional concept of collateral, it was added here in response to a commenter's request because it was determined that an irrevocable letter of credit would offer the regulatory authority a financial commitment as secure as the bank which issued the letter. Such a commitment would, in some cases, be more secure than that offered by a surety company, depending upon the relative State requirements regulating surety company and banking practices. In order to assure at least the same minimum degree of security, the tests established for determining the maximum surety commitment of a surety company (Sections 806.12(e)(2) and (3)) also are applicable to banks granting letters of credit (Section 806.12(g)). Although a State regulatory authority may accept letters of credit along with surety bonds and traditional collateral bonds (Section 806.11(a)), nothing in this Subchapter is intended to prohibit a State from establishing more stringent criteria for the acceptance of either a surety bond, traditional collateral bond or letter of credit in addition to those set out in Section 806.12.

§ 800.11 Requirement to file a bond.

1. Section 800.11(a) is intended to make it clear that a permittee is required to file a performance bond which complies with this Subchapter prior to issuance of a permit for surface coal mining and reclamation operations on lands within an approved permit area. A few commenters recommended deleting the requirement to file the bond only after the application is approved. These comments were not accepted because a different approach would be inconsistent with the intent of Congress as set out in Section 509(a) of the Act, and because the amount of the bond cannot be determined until the proposed mining and reclamation plan has been approved by the regulatory authority. The regulations require the applicant to estimate the cost of reclamation (Section 805.11(a)(1)), but it is likely that the final bond amount set by the regulatory authority in many cases will be different.

Unless it has been done sooner, the regulatory authority shall notify the applicant of the amount of performance bond liability required for the entire permit area (to be determined in accordance with Part 805) when notice of permit approval is given. If an approval initially given by the regulatory authority is stayed by a hearing authority during the pendency of any appeal proceeding resulting from the approval, then the amount of required performance bond liability will be redetermined, if an approval is given after completion of the hearing. Such redetermination should be made in order to consider any changes in the mining or reclamation operations made as a result of the proceeding, and to account for any changes in reclamation costs caused by the delay.

Congress did not require that the amount of performance bond liability applicable to a permit be subject to review or an adjudicatory proceeding. Therefore, the Office does not require or provide for either administrative or judicial review of such a decision. The Office believes this is not inconsistent with due process because the regulatory authority has no discretion to reject a bond and withhold a permit if the required amount of performance bond liability is filed in accordance with this Subchapter and the regulatory program. Furthermore, the amount set is intended to assure completion of necessary work by the regulatory authority which must be satisfied that adequate resources are available to carry out its responsibilities. Given these factors, the Office believes that Congress intended to allow such a decision to be made by the sole discretion of the regulatory authority. Where the regulatory authority is a State under a State program, such decisions will be subject to oversight review by the Office. This review should be adequate to assure the effective implementation of Subchapter J.

2. Many comments were received regarding Section 800.11(b). A few commenters objected to the one-year incremental bonding system since it did not provide any flexibility for the regulatory authority to alter this time period. These comments were accepted and the one-year increment deleted in favor of no specific time period. This change was made, because the Act does not specify a one-year increment interval and flexibility is considered desirable in order to accommodate variations in mining practices.

3. A few commenters requested revisions regarding clarification of the scope of liability for a bond filed under the incremental system. In response, Section 800.11(b) has been rewritten to clarify requirements for filing a bond. As rewritten, the applicant may elect to file a performance bond for the entire permit area or choose to increment the bonding within the permit area. If the applicant chooses to increment the bond, the sequence of areas within the permit area for which bond liability will be added during the term of the permit, must be specified by the applicant and approved as part of the permit application. The total bond amount for the entire permit area also must be determined, and a schedule of incremental additions to bond liability must be approved prior to permit issuance. This alternative differs from that proposed in that it allows greater flexibility to the applicant and the regulatory authority in fitting the bonding and sequence of mining and reclamation operations to the actual conditions at the site rather than into rigid one-year increments.

Liability under bonds filed incrementally under an approved schedule, shall extend to the entire permit area and shall not be limited with respect to either surface area or reclamation work to be performed within a permit area. Legal authority for this requirement is found in Sections 509(a) and 701(A) of the Act.

The principle underlying this approach is the practical need to address the reclamation of a mined site as an integrated activity which can achieve success only if all the various phases of reclamation are planned and implemented with a view toward the entire mined area. To be avoided is a situation where the bond has been incremented and partial liability for the first area mined under the permit has been released, then a water pollution or other unanticipated problem is found in the area where the bond has been partially released. The remaining liability under the bond filed for that incremental area is inadequate to cover the work required to correct the problem, and liability under bonds filed for later increments is not applicable to the first area. It is intended that any bond liability filed under a permit extend to all reclamation, restoration or abatement work needed anywhere in the permit area to achieve the reclamation and environmental protection goals of the Act, regulations, and regulatory program. This principle will also apply to renewed permits where additional acreages to be mined are approved in

second or successive terms of the original permit. As the permit area expands with the approval of successive permit terms, the liability under a bond applicable to that permit will extend to the newly approved additions to the permit area.

This does not mean that the dollar amount of liability under a specific performance bond will change. The amount of liability under a given instrument will not change without the consent of the parties to the instrument. As mining advances, new areas are disturbed, and old areas successfully reclaimed, the total dollar liability of performance bonds under a permit will change. As the dollar liability changes, existing instruments creating the bond liability may be modified, supplemented by additional instruments, or replaced by new instruments at the option of the permittee with the approval of the regulatory authority. However, all bond liability in effect under a permit must apply to the entire area under the permit and extend to all reclamation, restoration or abatement work which may need to be performed by the regulatory authority at that operation.

PART 805—AMOUNT AND DURATION OF PERFORMANCE BOND

Part 805 prescribes the criteria that the regulatory authority shall use to determine the amount of performance bond applicable to a permit for a surface coal mining and reclamation operation. This Part also prescribes the minimum amount of each bond, periods of liability, and the requirement that the regulatory authority adjust the bond amount if the costs of reclamation are determined to have substantially changed during the term of the permit. The authority for this Part is found in Sections 102, 201, 501, 503, 504 and 509 of the Act.

§ 805.11 Determination of bond amount.

1. Section 805.11 provides standards the regulatory authority must use to determine the appropriate amount of the performance bond for each surface coal mining and reclamation operation. This Section is intended to clarify that the amount of such bond must be based on the estimated cost to the regulatory authority of completing all work at an operation in order to bring the site into full compliance with the Act, and not on the estimated cost to the permittee, since in the event of forfeiture, the regulatory authority will be required to do the work.

2. Revision of the proposed final regulations included combining the initial two paragraphs (a and b) of Section 805.11 for simplication. Also, the phrase "reclamation, restoration, and abatement work required of a person who conducts surface coal mining and reclamation operations under the Act, this Chapter, the regulatory program, and the permit" was chosen as an editorial revision to more clearly express the intent of the Office regarding the scope of activities subject to the bond liability. This phrase, or portions thereof, are repeated throughout the Subchapter. It is the intent of the Office that the initial bond amount, the amount retained after partial releases (Section 807.12(d)) and amounts forfeited (Section 808.14) be adequate to not only allow the regulatory authority to complete the backfilling, grading, topsoiling, and revegetation program contained in the approved reclamation plan, but also to restore any property damaged outside the permit area in violation of the permit and Section 515(b) (2), (4), (8), (9), (10), (12), (13), (15), (17), (18), (21), (24), and (f) of the Act. In addition, the amount must be adequate to abate any pollution or hazards to life or property which exist within or outside the permit area in violation of the requirements of Sections 515, 516, 517 of the Act and Subchapter K, or of Section 521 of the Act and Subchapter L of the regulations, or the permit and are causally related to the permitted operation. The Office recognizes that the regulatory authority cannot reasonably establish the initial bond amount based upon speculative events such as the need to abate ground water pollution, since the operation must be designed initially to prevent such consequences in order to qualify for a permit. However, such unplanned consequences occasionally occur due to improper mining or reclamation, or because an important variable was not evaluated properly. When such consequences are identified prior to the release of all liability and termination of the permit in accordance with Part 807, the permittee's legal obligation to abate them necessarily adds to the cost of reclamation.

Under such circumstances, the regulatory authority would be authorized to impose additional bond liability under that permit, or to retain a larger portion of the total liability than otherwise required in response to an application for release of bond, in order to ensure adequate funding to complete the abatement work required (Sections 805.14(a) and 807.12(d)).

3. Several commenters recommended that the bond amount should be sufficient to ensure an operator's compliance, but that it should be below the regulatory authority's completion cost. Section 509(a) of the Act specifically states that the amount of the bond shall be based on the regulatory authority's costs and not those of the operators. These comments were, therefore, not accepted.

Several commenters pointed out that vague wording existed in the proposed regulations when using the phrase, "estimated actual costs to the regulatory authority . . .". A conflict existed between the words "estimated" and "actual". To clarify, the language was changed to read, "the estimated cost to the regulatory authority . . .".

4. A few commenters requested a definition of the bond penalty. The bond penalty is construed to mean the total liability under performance bond(s) applicable to a permit as set by the regulatory authority. The surety will always know the terms and conditions of the bond obligation before entering into a bond agreement because the amount is set prior to bond execution. Both Section 509(a) of the Act and Section 800.11 of the regulations require that the bond be conditioned upon faithful performance of all the requirements of the Act and the permit. Based upon this requirement, the bond may be viewed as a form of "penalty" and may be forfeited in the event the permittee fails to comply with any requirement of the Act or the permit. However, forfeiture is discretionary to the extent that it is not required by Part 808, and should be used as an enforcement tool only in serious situations. Based on this rationale, the comments were not accepted.

5. Several comments were received regarding the use of the words, "shall be based on . . . ", in context with the regulatory authority's criteria. They felt that the words should be changed to "may be" to allow more flexibility for the regulatory authority to determine bond amount. These comments were not accepted because it was determined that sufficient flexibility exists within the individual criteria to be considered. Deleting consideration of any criteria would preclude a decision by the regulatory authority which would be inconsistent with all the factors required by Section 509(a) of the Act.

6. Section 805.11(a) also contains a non-exclusive list of criteria the regulatory authority must use in making its determination as to bond amount. First, the regulatory authority will use the estimated costs that the permittee submitted with the reclamation plan as required under 30 CFR 780.18 and 784.13. This change was made in response to several comments which pointed out that data provided by the applicant would assist the regulatory authority in determining bond amount. This is consistent with Section 509(a) of the Act which states that the "amount of bond required for each bonded area shall depend upon the reclamation requirements of the approved permit".

Several comments suggested adding a new subparagraph to consider the specific factors of topography, geology, hydrology and revegetation potential since they appearirements or the need to bring additional personnel or equipment to the permit area.

8. In response to a few commenter's request, Section 805.11(a)(4) was added to provide for consideration of cost changes which may occur on the basis of changes during the preceding 5-year period. Failure to consider such changes would result in a bond which may not be adequate to complete essential reclamation activities because the period of liability is for 5-years after the completion of revegetation work, at a minimum.

Note that in this Section cost "changes" are considered, which reflects a language change from the proposed regulations. The original language stated that only cost increases would be considered. The change was made in response to a few comments which pointed out that while cost increases may occur, the possibility exists for costs to decrease in the future as a result of improved technology or changes in the economic structure. In considering either prospective increases or decreases in costs, the regulatory authority must identify a five-year pattern of change as the basis for making future projections. Speculative changes not based on patterns of actual experience observed in the industry should not be used to project future change.

9. Section 805.11(a)(5) allows the regulatory authority to utilize other data that would be of assistance in determining the bond amounts. The regulatory authority can require an applicant to produce the data necessary for proper determination of bond amounts. This change was made in response to a commenter who suggested that the regulatory authority should have the authority to require additional information if it was available.

The Paragraph pertaining to specific criteria for determining bond amounts for underground mine operations, as it appeared in the proposed final regulations under Section 805.11(b)(2), has been deleted from the final regulations.

10. Many comments were received relative to this Section recognizing the enormity and complexity of developing criteria for bonding the surface effects of underground mining. These pointed out that ensuring successful environmental protection from underground mining is made difficult by the two principal surface effects—subsidence and mine drainage—and by the fact that they can occur over a very long time period. While the Office is cognizant of the arguments, no clear-cut solution was presented in the comments. Both the complexity of the issue and a present lack of adequate information to develop a special bonding program for underground mining has led to the deletion. Further study is required regarding the long-term effects of underground mining. Until a solution to this problem is found, general criteria for performance bonds will apply to both underground and surface mining operations.

§ 805.12 Minimum amount.

1. Section 805.12 is a statement of the minimum amount required for performance bonds for surface coal mining reclamation, restoration, and abatement operations. This Section follows the basic intent of the Act that bonds shall be used to assure the faithful performance of applicable performance standards in the Act and this Chapter. The Section also specifies, as does the Act in Section 509(a), that in no case shall the initial bond be less than $10,000 for a permit area, even if the amount determined by the standards set forth in this Section would be less.

2. Many comments were received in relation to the minimum $10,000 bond requirement, stating that this is discriminatory to small operators. The minimum bond amount is based on the Act and cannot be altered. Additionally, the bond is incrementally released as required under Part 807 and the $10,000 minimum does not apply to bond release.

To simplify this, proposed Section 805.12 was condensed to incorporate Subsections "a" and "b" into one paragraph.

§ 805.13 Period of liability.

1. Section 805.13 provides for the period of liability or duration of the performance bond liability applicable to a permit.

Under Section 805.13(a), bond liability continues until all reclamation, restoration, and abatement work has been completed (see discussion of the intended scope of such work under Section 805.11), and the bond liability has been released in accordance with Part 807 of the regulations. The reference to Part 807 reflects the views of several commenters who recommended reference to the requirements for release of performance bonds. There was one comment which requested that the initial phrase "at a minimum" be deleted from this Subsection since there is no reason to provide for time expansion of the potential bond. The phrase has been retained in context because this ensures compliance with other Federal or State regulations that may be of concern on a particular permit.

2. Under Section 805.13(b), the liability period for surface coal mining and reclamation operations is required by the Act and is coincident with the minimum period of liability for assuring the success of revegetation under Section 515(b)(20). That period is either five or ten years following the completion of revegetation work, depending upon the average annual precipitation in the area. This period is considered the minimum period because States have the discretion to extend the period of liability as a part of the regulatory program, or the regulatory authority may refuse to release the bond at the end of this period if any condition remains which would require retention of liability in accordance with Section 807.12(d). The text of Section 805.13(b) also has been clarified to prevent termination of the five- or ten-year liability period in those circumstances where the regulatory authority has required the permittee to take further measures related to assuring the success of revegetation, but where the permittee has failed to comply. The failure of the permittee to perform the additional measures might be the result of either a willful refusal to comply or an impossibility (e.g. unsuitable weather), but the permittee should not be relieved of liability in either case as long as more work has been required prior to the termination of the liability period.

3. In Section 805.13(b), several comments also were received suggesting that the five-year period of liability for surface mining was too long. Because the Act is quite specific in its requirements for a five- or ten-year period of liability for surface coal mining and reclamation operations, these comments were not accepted. There were many comments received in relation to the ambiguity as to when the five- or ten-year period before final release of bond commences. Section 515(b)(20) of the Act specifies that the permittee assumes responsibility for successful revegetation for a period of five or ten years commencing after the last year of augmented seeding, fertilizing, irrigation, or other work. Thus, the period of liability is set in the Act. In an effort to add clarity the Section has been reworded.

§ 805.14 Adjustment of bond amounts.

1. Sections 509(a) and 509(e) of the Act require that the applicant's bond shall be adjusted by the regulatory authority from time to time to assure sufficient funds for completion of the reclamation plan if the work had to be performed by the regulatory authority in the event of forfeiture. A permittee or any person with a valid legal interest that may be adversely affected may request such an adjustment. Consistent with the decision not to pro-

vide for an adjudicatory hearing with respect to the initial decision of the regulatory authority regarding the amount of performance bond liability that is applicable to a permit (see discussion at Part 800,), the Office has not proposed and will not require such a hearing with respect to adjustments of the bond amounts required by the regulatory authority. In addition to not requiring a hearing for adjustments in the amount of performance bond liability, Congress has also specified no procedure for the regulatory authority to require compliance with its decision to adjust the amount. If the permittee has chosen to increment his bond payments over the term of the permit, or if the operation will require a renewal of the permit, a decision by the regulatory authority to increase the amount of liability can be implemented by not accepting bonds filed in lesser amounts and refusing to allow mining to continue beyond the previously bonded area, or by withholding a permit renewal until the required amount is filed. No other procedures are explicitly provided for enforcement of an adjustment decision.

2. The regulations require the regulatory authority to review the bond amount no more frequently than the regulatory authority is required to review the permit under 30 CFR Part 788 unless acreage increases or changes in operations or standards trigger a more frequent review. The mandatory review is required by Section 509(e) of the Act. A review of bond amounts was tied to the review of permits in order to accommodate administrative convenience and to ensure that changes in operating requirements required as a result of the permit review are reflected in the performance bond liability applicable to that permit. More frequent reviews may be made by the regulatory authority at its discretion.

3. Several commenters felt that bond adjustments were mandatory and that a change of language would give the States some flexibility on adjustments. Section 805.14 as written points to specific times when an adjustment may be necessary; however, there must be some cost basis upon which to make a cost analysis. Without this data, an adjustment cannot be made. The Section as written provides sufficient flexibility to decide when adjustments are needed. Several comments were directed toward the fact that sureties would have difficulty in properly calculating maximum liabilities, if bonds were increased when adjusted. It was recognized that bonding companies will have to analyze their financial obligations closely, if the bond is increased, however, the purpose of Section 509(e) of the Act is to provide sufficient funds for reclamation through adjustment, if necessary. These comments were reviewed and were not accepted. One comment suggested that once the initial bond was set, any increase in reclamation costs (in the event of forfeiture) should be funded by the regulatory authority through the reclamation fund provided for by Section 402 of the Act. Section 402 of the Act applies to operations that were legally abandoned on August 3, 1977, therefore, funds under Section 402 are not available for operations that were active on or after that date. Since there are no provisions in the Act to provide funds as addressed by this comment, it was not acceptable. Several surety companies were concerned that the regulatory authority only notified the permittee and not the bonding companies. Sureties only are responsible for the initial amount of the bond they accept, and do not need to be notified of adjustments in the amount of liability under a permit by the regulatory authority. If the bond is increased, it is the responsibility of the permittee to get the additional bond to cover that permit area, not the sureties, so additional language to that effect was not required.

4. Word changes have been made in this Section to delete the term "underground mining" and to include revisions of permits (rather than increases or decreases of acreage). Due to a comment received, it was decided that a decrease in acreage should be treated as a partial release of bond because it would remove the acreage from the permit area and thereby relieve the permittee of any further legal obligations with respect to such lands. Such major change in status should not be allowed without informing persons who might be affected and allowing them an opportunity to participate in the decision. The word "performance" was added to "bond" (as defined in 30 CFR 701.5) to clarify its application in Section 805.14.

Section 805.14(b) imposes a requirement on the permittee to prove that his activity justifies a reduction in the amount of the performance bond. A commenter suggested that any request for a reduction of bond be considered as a request for a partial release of bond in accordance with 30 CFR Part 807 of this Chapter. As the regulations were drafted, there appeared to be no discernable difference between adjustment of a bond due to a decrease in acreage and a partial bond release. Therefore, the comment was accepted and appropriate changes were made in this Section.

6. To simplify the intent of proposed Section 805.14 (c), (d) and (e), hearings and decisions on bond adjustments by the regulatory authority now are dealt with and expanded upon in Section 807. In contrast to the absence of a provision for adjudicatory hearings in cases where the amount is adjusted upon the initiative of the regulatory authority Section 805.14(b) requires that the procedures established in Part 807 for requests for bond release be followed if the permittee initiates an adjustment which would result in a reduction of the total bond liability applicable to a permit. The intent of the Office is to ensure that when a decision is made by the regulatory authority to release some portion of the original bond liability required as a condition for the commencement of mining, that persons who may be affected by that decision will be informed and will have an opportunity to participate in the decision.

The Office recognizes that providing this opportunity for public participation by incorporating the procedures in Part 807 also provides a permittee with an indirect opportunity to obtain an adjudicatory hearing with respect to the bond amount. The permittee is not restricted to any particular time or factual circumstances as a condition for making his request, except that his request is necessarily limited to bond liability already in effect and applicable to a particular permit. An unsatisfactory response by the regulatory authority would give the permittee the option to request an adjudicatory hearing in accordance with Part 807. In such a proceeding, the burden would be on the party opposing the decision of the regulatory authority to establish that the decision was arbitrary, capricious or inconsistent with law.

PART 806—FORM, CONDITIONS AND TERMS OF BONDS AND LIABILITY INSURANCE

Part 806 provides for the form, conditions, and terms of performance bonds and liability insurance. A total of 111 comments were received in reference to this Part.

806.11 Scope.

1. Section 806.11(a) provides for two forms of performance or indemnity bonds which a regulatory authority will accept, a surety bond and a collateral bond. Several commenters suggested using "may allow for either" instead of "shall allow for either", thereby giving the regulatory authority more flexibility in determining the form of the performance bond, and allowing States to use their individual standards for bond forms if they so desire. The regulations state that the regulatory authority shall allow for either a surety or collateral bond, but does not necessarily limit the acceptable bond form to these two types. Therefore, the preferred language

usage is "shall allow" because it assures that at least these two types of bond forms shall be accepted, and allows the regulatory authority to accept a self-bond which meets the criteria of Section 806.11. In addition, Section 806.11(c) allows the Secretary to approve an alternative bonding system which meets the minimum criteria in Section 806.11(c) (1) and (2). This would allow for alternative forms of financial guarantees that are not considered surety bonds, collateral bonds, or self-bonds.

2. When reviewing a State-proposed alternative form of financial guarantees, the Office will evaluate the degree of certainty of the alternative as compared to the regulatory scheme with respect to the two criteria of review. For example, under the regulatory scheme, the certainty of having sufficient funds available to complete reclamation depends primarily on the certainty that the surety will remain solvent, or that a second surety can replace the first, if necessary, prior to default by the operator. Such degree of certainty is extremely high. An alternative system must guarantee at least an equal degree of certainty in order to qualify.

3. Sections 806.11(a)(1) and 806.11(a)(2) have been shortened to include only the terms "surety bond", and "collateral bond" respectively. This was done to avoid repetition of Section 800.5 which was added to define these terms in detail. Two comments pointed out the vagueness of the terms which led to the clarification.

4. Section 806.11(b) establishes criteria for the self-bond, authorized under section 509(c) of the Act. Sixty comments were received which referenced the self-bond issue.

Several comments suggested deletion of self-bonding entirely. The rationale being that only a bond supplied by a surety company would guarantee proper funding for reclamation. Encouraging self-bonding would allow large operators to withdraw from the bond market, thereby leaving surety companies with the highest risk small operators. Surety industry commenters concluded that they would withdraw from the coal business if most of the large coal producers were allowed to self-bond, thereby forcing most small operators out of production.

One of the commenters did not want self-bonding because of its inherent inadequacy for assuring completion of reclamation. Alternatives include abolishing the self-bond, or requiring that a general reclamation fund be established, but these options are not open to the Office by law. A State clearly has the option to abolish self-bonds if it chooses. Such action would make the State bond program more stringent than under Federal law. The State also has the option to establish additional conditions on the approval of a self-bond.

Since provisions had to be made in accordance with the Act for the self-bond, three options were open. First, to establish economically unacceptable requirements to force large operators to remain in the general pool of surety customers. Second, to make it easy for large operators to qualify, thereby testing the prediction that the surety industry will withdraw from the coal business. Finally, the Office could have made it easy for all operators to qualify, and thereby expose the public to an unacceptable risk of bearing the reclamation costs. The Office preferred not to attempt to predict surety industry responses to changes in the bond market because its knowledge of the bond market was imperfect, at best. A judgment was made that low capital operations dependent on a few owner-managers cannot be expected to provide a safe risk over long term extended operations. Operations with more capital can be reasonably expected as a safer risk. Therefore, revisions were made to the proposed regulations consistent with these basic assumptions. First, the signature requirements in Section 806.11(b)(6) were simplified for corporations. The proposed requirement for signature by all the members of the board of directors was dropped in favor of a process which would require approval of the board so that the board would have direct knowledge of the corporate commitment. Stricter requirements, however, were retained or partnerships and proprietorships because of the relative ease with which such forms of business can be liquidated by the owners thereby leaving the regulatory authority with a valueless shell as the remaining obligor under the bond.

5. An example of the problem which concerns the Office most with respect to the self-bond procedure is the much litigated Blue Coal Case in Pennsylvania. There a multimillion dollar coal producer was closely held by its family-managers for many years. In the mid-70's, the company was sold to a new owner who commenced rapid liquidation of the company's assets while continuing coal mining activities at certain operations in the anthracite region. Litigation was first commenced by the Commonwealth in 1974 when the new management's liquidation program included the sale of the company's huge dragline. If the dragline were removed from the site by the purchasers as planned, regarding operations consistent with the company's reclamation plan would have become impossible. In order to prevent such a situation, the Commonwealth sued to compel continued use of the dragline on site until reclamation requirements were met.

This case was entitled *Commonwealth vs. Blue Coal Company*, 51 Equity Term 1974, Luzerne County Court of Common Pleas. Subsequent to entering a consent decree in the equity proceeding, Blue Coal's owners carried the liquidation process to the point of bankruptcy. Thereafter, it became clear that the requirements of the consent decree were not being implemented, thereby requiring further judicial action to obtain satisfactory reclamation of the operation. An action was filed against the trustee in bankruptcy to substitute him in the equity proceeding. This matter was finally resolved by the bankruptcy court so as to subject the trustee to the equity court's jurisdiction, but only so long as mining operations were continued by the trustee.

In its decision in *In re Blue Coal Corporation, Bankrupt: Shea, Trustee vs. Commonwealth of Pennsylvania*, BK-76-1311 (DC; MD; PA; Jan. 18, 1979, per Gibbons, J.) the court stated:

> If the trustee elects to terminate the strip-mining of the bankrupt's coal lands his responsibility for all practical purposes will be terminated. The Commonwealth will be left with the proceeds of its claim, whatever they may be. If the strip-mining continues the trustee must observe the regulations set forth in the Surface Mining Act.

There is little doubt that Blue Coal would have been a prime candidate for approval as a self-bonded operator in the early 1970's. However, as the litigation history of this company has shown, a regulatory authority would have found it very difficult to protect the legitmate interests of the public in achieving successful reclamation when confronted with a management decision to liquidate. First, the agency is not informed of management's decision until the company's conduct at the mining operation becomes sufficiently blatant to cause an observer to infer what management's intentions are. Second, once it becomes reasonable to suspect management's intentions, financial resources may no longer be available to complete all reclamation work. Third, forfeiture on the self-bond could force bankruptcy which, assuming the bankruptcy court's decision in *Blue coal* becomes the rule, would induce the termination of the operation thus leaving the trustee with no duty to reclaim, hundreds of miners out of work, and the regulatory authority standing in line with all its fellow creditors. The likelihood of recovering the resources from the bankrupt's estate to complete all reclamation would be extremely small. Such a result cannot be the result in-

tended by Congress when it established the self-bond requirement.

In drafting the self-bond regulations in response to thoughtful comments from the States, industry and citizens groups, the office intends to preclude another Blue Coal situation.

6. There were several comments suggesting the inclusion of the exact language of Section 509(c) of the Act, rather than specifying detailed criteria for self-bonding. This would, in effect, leave the States complete discretion in the adoption of the criteria. This approach was contrary to the general thrust of state comments. It was felt that self-bonding invites potential disaster to the public unless it is carefully regulated so as to accomplish the results of bonding provisions intended by Congress. The office believes the Congressional goals were twofold (a) to assure the regulatory authority of funds to complete reclamation in case of default by the permittee and (b) to create financial inducement large enough to assure complete reclamation by the permittee or a trustee in bankruptcy. Even in bankruptcy, it will often be cheaper for an operator to do the work and recover the bond (especially collateral or secured property) than to allow a forfeiture. This is because the amount of the bond will be based on the regulatory authority's cost and the operator will be able to complete the work for substantially less with equipment and labor on hand.

The legislative history in Senate report No. 95-128, p. 78, supports the view that self-bond provisions should accomplish the generally expressed goals of the bonding provisions. This cannot be accomplished without imposing strict conditions for the approval of a self-bond. Some of these conditions were explicitly required by Congress, others were initially proposed and now are modified in response to comments, and still others are new as a result of helpful ideas supplied by commenters.

The first is Section 806.11(b)(1) which is required by Section 509(c) of the Act, and which has been modified to assure that the agent of a permittee is in the state where the operation is located thereby assuring that the legal representative of the permittee is within the reach of the process of State or Federal courts.

The second condition, Section 806.11(b)(2), establishes a net worth test for the approval of a self-bond. This test was proposed as two times the total amount of self-bond obligations on all permits issued in the United States, but has been changed in response to comments from the surety industry and citizen representatives to six times the total of such obligations.

7. A few commenters were concerned with the reliance upon net worth as an adequate measure of financial ability to complete reclamation. This Section appeared as Section 806.11(b)(3) in the proposed draft of the regulations and has been renumbered in the final regulations to Section 806.119(b)(2). Specifically, one commenter stated that the concept does not recognize serious limitations on its use as a criteria for determining the readily available assets to the regulatory authority. Comments from surety companies pointed out that reliance on the two times multiplier as proposed in the September 18 regulations was much lower than the rule-of-thumb generally followed in the industry, i.e., 6-8 times.

Alternatives considered were (1) to retain the original two times multiplier; (2) to increase the multiplier; (3) to use net worth in conjunction with a security interest in property as requested by several commenters; (4) to evaluate other measures of corporate financial health in conjunction with net worth; or (5) a combination of 2, 3, and 4 above. Alternative (5) was chosen using a combination of increased multiplier, addition of security interest requirement discussed below, and establishment of general criteria for review of a company's financial solvency, as discussed further below.

The multiplier in the "net worth" test was increased to six times the total amount of self-bond obligations on all permits issued to the applicant to more clearly reflect that presently used by the surety industry.

8. One commenter suggested allowing net worth of corporate parents to be included in the calculation. This comment was accepted provided that, under Section 806.11(b)(6)(i)(D), the net worth of the applicant and its corporate parents both would be available to the regulatory authority in case of forfeiture. The net worth of the corporate parent is considered only if it is a joint guarantor of performance under the self-bond.

9. There were several comments relative to documentation of the applicant's net worth by a certified public accountant. The alternative suggested was amending Section 806.11(b)(2) to permit the certified financial statement from the last fiscal year-end to document the applicant's net worth. This was rejected because it would restrict the regulatory authority's discretion. The retained language allows the regulatory authority the option to use the last year-end statement as requested by the commenters, or to request a current statement where deemed appropriate.

10. Relative to Section 806.11(b)(3), the third condition for the approval of a self-bond is a requirement that the applicant grant to the regulatory authority a mortgage or security interest in property which has a fair market value equal to or greater than the bond obligation. This requirement was requested by a commenter concerned that the public might have to bear the expense of reclamation in circumstances similar to the *Blue Coal* case previously discussed. Also a similar requirement was included in the Wyoming self-bonding regulations which were submitted to the Office along with a request that the State requirements be incorporated into the Federal regulations. Each of these comments were considered valid since otherwise the regulatory authority would be left responsible if the permittee goes bankrupt, dissolves, or leaves the country. Also, as shown by Pennsylvania's recent *Blue Coal* experience, even large closely held corporations can be robbed of assets. The financial vitality initially relied upon by the regulatory authority can be quickly dissipated. The regulatory authority must forfeit and force bankruptcy with the regulatory authority then becoming responsible for massive clean-up operations with little expectation that the full value of the bond will be recovered.

In the Senate Committee Report No. 95-128 (May 10, 1977), p. 78, the Committee specifically required the "deposit of cash and negotiable (bonds) . . . in lieu of posting a bond. These meet the objectives of the bond, i.e., having a fund available to accomplish reclamation just as effectively as a bond." It is reasonable to conclude that Congress intended the Office to develop criteria for self-bonds to "meet the objective of the bond, . . . just as effectively as a bond." A degree of certainty nearly equal to that of a surety or collateral bond that the fund will be available when needed can be achieved by requiring a security interest in real or personal property of sufficient value to cover reclamation costs. With this requirement, the regulatory authority will be able to recover the secured claim with priority over any other creditors in case of involvency or bankruptcy. Sections 806.11(b) (3) and (4) are, therefore, additions to the regulations.

11. The Office has interpreted the legislative history to require that funds needed by the regulatory authority to complete reclamation be available and as secure under a self-bond as they would be under a surety or collateral bond. This only can be accomplished by giving the regulatory authority a security interest in property of sufficient value as required by Section 806.11(b)(4). In addition, the Office does not believe it is reasonable to allow self-bonds which fail to meet the criteria for an alternative system of financial guarantees, (Section

806.11(c)). The second criteria, i.e., "substantial economic incentive for the permittee to comply" can only be adequately accomplished by a combination of the security interests required by Section 806.11(b)(4) and personal liability for those officials or owners of a company who control its financial policies and operating conduct as required by Section 806.11(b)(6)(iii).

It is intended that the interest of the regulatory authority in the property pledged to secure the performance of the permittee' duties be superior to all other claims against that property. Whenever recording or filing requirements are necessary in order to preserve a claim against subsequent purchasers for value, this shall be done. Where State law does not allow a claim to be preserved or given priority over a subsequent purchaser for value for certain classes of property, such property may only be pledged if delivered into and retained in the possession of the regulatory authority.

12. The fifth condition for obtaining approval of a self-bond is the statutory test of Section 509(c) of the Act which requires the applicant to demonstrate a history of financial solvency of continuous operation, (Section 806.11(b)(5)). Congress offered no clear guidance regarding the detail of the demonstration required, and none was initially proposed by the Office. However, a number of commenters asked that it be added. Many comments were directed to proposed Section 806.11(b)(2), applicant's history of compliance with the Act. Many commenters asserted that no authority exists for requiring history of compliance as a criteria for self-bond. The alternatives considered were to (1) retain the regulation as written in the proposed final draft; (2) delete the regulation and replace it with Section 509(c) of the Act; (3) amend the section to provide that the applicant shall not have to demonstrative a history of non-complanice and; (4) replace the Section with detailed criteria for demonstrating financial solvency and continuous operation. Alternative (4) was selected.

13. It is agreed that Section 806.11(b)(2) of the proposed regulation which would have required demonstration of compliance with the Act for 10 years is impractical because the Act was not enacted until August, 1977. However, it should be noted that the proposed regulation did not require a spotless record of compliance, but only that degree of compliance which would avoid a shutdown under the Act, i.e., complying with notices of violations, not exhibiting a wilfull pattern, or not forfeiting a bond. Each of these are related to the two criteria for self-bonding in Section 509(c) of the Act, i.e., continuous operation and financial solvency. It is not unreasonable to require the operator to make the same kinds of showings to the regulatory authority that would be made to persuade a surety to sell him a bond. Sureties commented that one evaluation they make is the probability that the operator will complete the work. Directly related to establishing his ability to complete the work, is the ability to conduct current operations so as to avoid those kinds of violations which would result in cessation orders, permit revocation, or bond forfeiture. Reasonable inferences regarding the likelihood of compliance or future violations may be drawn from the operator's past history. Specific criteria for evaluating the compliance history of the applicant were dropped, but the regulatory authority will receive compliance information pursuant to Sections 778.14 or 782.14 and may take it into consideration when reviewing a request for approval of a self-bond.

14. Additional criteria to be considered by the regulatory authority when determining whether a history of financial solvency and continuous operation has been satisfactorily demonstrated have been derived primarily from the Wyoming regulations. These have numerous provisions requiring information which is useful to the regulatory authority in evaluating an applicant's history of financial solvency and continuous operation, and predicting further financial capability required by Section 806.11(b)(5). These criteria and related information include Section 806.11(b)(5)(iii), the history of the applicant's prior bond obligations in effect on each of its active coal mining operations in the U.S. during the 10 years prior to the application; Section 806.11(b)(5)(iv), a description of such coal mining operations including the dates within which each operation was conducted by the applicant, and an explanation for any periods when any coal mine was not in operation; Section 806.11(b)(5)(v), a financial statement containing sufficient detail to permit the regulatory authority to identify any short or long-term patterns of cash flow, asset depletion, excessive debt obligations, or other factors which would affect the financial ability of the company to guarantee the performance of all obligations at a given operation; Section 806.11(b)(5)(vi), a list of legal proceedings arising out of claims by private or public parties based on the failure to perform other obligations, financial or otherwise, during the preceding 10 years; and Section 806.11(b)(5)(vii), information relating to any actual or alleged failure to disclose financial transactions, data or practices as required by law so as to assist the regulatory authority in evaluating the credibility of the information supplied by the applicant.

The Office recognizes that the information required by Section 806.11(b)(5) is extensive. However, all of it is information already known by the applicant, and little, if any, will be made public for the first time under this regulation. Therefore, the Office does not expect it to impose a heavy burden on the applicant, and it will contribute substantially to the ability of the regulatory authority to evaluate the demonstration required under Section 509 of the act.

15. The final requirement for self-bonding in Section 806.11(b)(6) is that an indemnity agreement must be executed by the applicant and those individuals with responsibility for the mining operation, whether it is a corporation, partnership, individual or any other form of ownership. This Section was renumbered from section 806.11(b)(4) in the proposed regulations to Section 806.11(b)(6) in the final. The purpose is to bind in agreement not only the applicant, but also those individuals who have authority to make decisions relating to whether or not the applicant complies with the Act. It is the Office's intention to require these individuals to sign in their individual capacity so as to create a strong financial incentive for all non-corporate operators who self-bond to comply to the fullest extent with the requirements of the act. Such personal liability is consistent with the traditional liability of proprietors and partners.

16. Several comments addressed the requirement for signatures of principal corporate officers on the indemnity agreement. It was suggested that proposed Section 806.11(b)(4)(i)(A) be amended. Alternatives considered were: (1) retaining original language; (2) eliminating all special signing requirements; (3) amending the section to read, "If the applicant is a publicly-held corporation, its principal executive officer or officers and its principal accounting officer . . ."; (4) modifying the section to read "If the applicant or its parent is a publicly-held corporation which has not established a net worth;" or (5) amend as follows, "If a corporation, then by two corporate officers who are authorized to sign the agreement by a resolution of the board . . .". The last alternative was chosen because in large companies, to require each board member to be personally liable is unrealistic, and to require principal officers to be liable without intentional misconduct or negligence on their part is inconsistent with traditional notions of limited liability for corporations and the lack of liability for faultless owners or officers. However, the regulations will re-

quire that the board of directors authorize the execution of the agreement.

17. A comment requested deletion of the requirement of execution of the indemnity agreement by a parent organization because it was unnecessary and unreasonable. This rationale was rejected because it is important to make liable on a self-bond those who are in a position to direct or control the financial policy or mining practices, especially when the permittee is a wholly-owned subsidiary. Of special concern are those situations where the permittee's parent organization(s) decide to liquidate the organization, leaving a valueless shell. Additionally, a frequent practice in Western States is for two or three large corporations to engage in a joint venture, which is itself either a corporation or partnership, to operate a large mine. Often for tax reasons, the capital equipment is leased to the venture company by its parents, the coal resource is owned by one of the parents or a third party, the venture company has few assets in its own name and is not intended to survive the life of the mine. In these circumstances, it is important to have a commitment from the parents to insure sufficient funds in case of forfeiture, and to act as an inducement for the operator to complete the work.

18. Concerning the requirement for execution of the indemnity agreement by the applicant and its parent organization(s), section 816.11(b)(4)(i)(c) as proposed (section 806.11(b)(6)(i)(c) as revised), a few comments stated that it was unnecessary for all parents to be held responsible for self-bonding. While it may seem burdensome, this is necessary to insure sufficient reclamation funds to the regulatory authority and to act as an inducement for the operator to complete the reclamation work. Clarification of this Paragraph was made to better identify the requirement.

19. Along similar lines, another commenter wanted deletion of section 806.11(b)(4)(i)(E) (Section 806.11(b)(c)>(i)(D) as renumbered), execution of the indemnity agreement by the applicant's spouse, if married. The comment was rejected because the rule was designed to avoid the transfer of an operator's assets to his or her spouse, thereby leaving the operator judgment proof.

20. The requirement for the execution of the indemnity agreement in a closely held corporation, by its principal investors, its principal executive officer or officers, its principal financial officer, its controller or principal accounting officer as required in proposed Section 806.11(b)(4)(i)(F) has been deleted from the final regulations. A few commenters suggested the deletion. It was decided that the section should be eliminated for the reasons recited above under Section 806.11(b)(6)(i)(A). The primary justifications for requiring the personal liability of key officers in closely-held corporations, i.e., to assure a recourse for the regulatory authority in the event the corporation is deprived of its assets, and to create a financial incentive for the owners to complete reclamation, are now achieved by the new requirement for a security or mortgage interest in property pledged to guarantee performance of the bond obligation. A pledge of property is considered a far more secure commitment than the personal liability of the officers of small corporations. The pledge of property required by Section 806.11(b)(4) eliminates any further justification for the personal liability requirement.

21. Section 806.11(b)(4)(iii) of the proposed regulations provided that "the indemnity agreement shall be a binding obligation, jointly and severally, on all who execute it." Several commenters requested deletion of the section because they felt it made self-bonding unworkable and defeated the intent of section 509(c) of the Act. These comments were not accepted because to do so would have removed personal liability from all officers or parent organizations of the permittee. While liability for civil or criminal penalties under Section 518 of the Act is available, any obligation to personally fulfill bond obligations in the event of forfeiture would have been lost. The result would be to remove some of the financial inducement to comply with the reclamation plan. Another consideration was that deleting this provision would relieve the parent of a subsidiary from being coguarantor on a bond.

22. Section 806.11(c) implements the Section 509(c) of the Act requiring that the Office approve alternative bonding systems. Any alternative must meet, at a minimum, the two main goals of a bonding program. The first is to assure that the regulatory authority will have available, in the event of forfeiture, sufficient money to complete applicable reclamation, restoration or abatement requirements. Second, a bonding system must provide a substantial economic incentive for the permittee to comply with all reclamation requirements. Either a surety bond or a collateral bond makes the liability for which the operator may ultimately be responsible a significant incentive for him to comply with the act. In self-bonding, the requirement that the indemnity agreement provide joint and several liability for all individuals involved in a particular operation gives all of them a significant incentive to comply with the Act. An alternative system of financial guarantees must achieve the same incentive, and subject operators to the same threat of substantial penalty in the event of forfeiture, or its equivalent.

§ 806.12 Terms and conditions of the bond.

1. Section 806.12 contains the terms and conditions for bonds. Particular attention was given to the requirements for surety bonds which were drafted to prevent any abuse in the system that may leave the regulatory authority without an effective remedy. These same provisions were then applied to letters of credit when that concept was accepted.

2. Section 806.12(e) contains a number of special conditions applicable to surety bonds. The first major requirement is that the regulatory authority not accept a bond written by a surety company unless the surety company agrees that the bond shall not be cancellable at any time for any reason, including nonpayment of premium by the operator or bankruptcy by the operator. A few commenters opposed this requirement because it would be unreasonable to expect the surety to continue coverage if the permittee is bankrupt or fails to pay premiums. They claim that the regulations, as written, are so objectionable to surety companies that they substantially limit companies willing to write such bonds and may increase the cost of such bonds. Recommended alternatives were: (a) to allow cancellation providing there is written notification sent to the regulatory authority a certain time period prior to the cancellation; (b) to allow the surety to cancel a bond on unmined land with prior notice to the regulatory authority; or (c) to allow cancellation of a bond with the consent of the regulatory authority upon sufficient substitution by the permittee with another performance bond.

In response to these comments, Section 806.12(e)(1) has been amended to allow cancellation only of bond coverage for permitted lands not yet disturbed provided the surety gives at least 60 days notice to both the operator and regulatory authority prior to cancellation and receives approval for the cancellation from the regulatory authority. The regulatory authority may approve cancellation only if there is a replacement bond filed by the permittee or the permit areas have been reduced to include only those operations for which remaining performance bond liability is sufficient. The surety's co-guarantee for reclamation work on lands that have been disturbed cannot be cancelled because, even if the operator fails in business, the regulatory authority must be able to look to a financially stable and

secure guarantor for performance of the reclamation obligations under the permit, including collection at the time of bond forfeiture, if necessary.

3. In accepting a surety company as a guarantor of performance under a bond, the regulatory authority has a right to expect that for any disturbed land the guarantee will be good for as long as the applicable period of liability established for the particular mining activity involved. Therefore, the regulations are written to forbid cancellation of a bond on disturbed land. Allowing the surety to cancel a bond for undisturbed land is an opportunity for the surety to withdraw from any future liabilities with the permittee if it is desirable. The notice which is due 60 days prior to cancellation is necessary to give the permittee and regulatory authority time to secure and approve a new bond for the land or to reduce the permit to the area that has sufficient bond coverage. However, if arrangements satisfactory to the regulatory authority cannot be made, the burden will be on the surety to compel the permittee to suspend operations to prevent the surety's obligation from increasing as new areas are disturbed. The regulatory authority will have no obligation to suspend operations because the bond will remain in effect until cancellation is approved under the regulation. This restriction is based on the first principle of surety law, i.e., the surety undertakes the obligation to stand in the shoes of the principal, and his obligation may not be rescinded or terminated without the consent of the party to whom the duty is owed. The restriction of this provision does not bar the placement of performance bonds (30 CFR 806.13).

4. The second major restriction on surety bonds relates to the maximum single obligation (Section 806.12(e)(2)). In the Commonwealth of Pennsylvania, the maximum single obligation is defined as ten percent of the capital surplus account. A standard based on the capital surplus account is an indication of the liquid assets of a surety company. Most States have a maximum single obligation applicable to surety companies in order to assure that a surety company does not engage in the practice of writing bonds in excess of its ability to pay if there is a default. This Section has been drafted to reflect the fact that some States might have other requirements in terms of a maximum single obligation, or might not have any requirement, in which case the ten percent amount would be applicable.

5. The third major restriction on surety bonds is a requirement, in Section 806.12(e)(3), that a surety company not write bonds in excess of three times the maximum single obligation for any particular operator. The rationale for this requirement is that if a company were allowed to write bonds for many permit areas on behalf of a single operator in excess of this amount, the surety company could be forced into bankruptcy if the operator failed. It should be noted that when an operator fails on one permit, the operator may also default on every bond obligation at every permit site because failures are usually related to a failure in business, bankruptcy or the death of a principal. It seems clear that the total amount of bond obligation that might be assessed upon default against a particular surety company, if it is not limited to some reasonable amount as proposed, might very well overwhelm the surety and force it into bankruptcy. Such an occurrence would not adequately protect the regulatory authority's need to provide a safe source of funds should an operator fail.

6. Section 806.12(e)(4) as proposed would have allowed the regulatory authority to provide in the bond that the amount of the bond shall be confessed to judgment upon forfeiture if confession of judgment is authorized by State law. A few commenters suggested deleting this provision because there are substantial conflicts with due process when dealing with confession of judgment clauses which are illegal in many States and because the surety should be allowed to assert any defenses to liability, to forfeit the bond, or meet the requirements of the bond in a compliance schedule. On the other hand a few commenters recommended making this provision mandatory, so as to assure the regulatory authority's collection of the forfeited bond. Although confession to judgment may be illegal in some States and may seem to be an unnecessary hardship for the surety, it is not mandatory. It is intended that this procedure be left entirely to the discretion of each State in the development of its State program. Even where effective, a confession of judgment clause can be avoided by exercising the right to appeal and requesting a stay of collection, or the option to set up a compliance schedule as specified in Part 808.

7. Section 806.12(e)(5) provides that the surety and permittee or applicant be jointly and severally liable so that the regulatory authority can seek collection of the bond from either or both of these parties.

8. A new Section 806.12(e)(6) has been added in response to a commenter's inquiry regarding how the regulatory authority will restore adequate coverage if the surety fails in business. The provision clarifies the duties of the permittee, surety and regulatory authority. The burden is ultimately on the permittee to continue effective performance bond coverage.

9. Section 806.12(f) sets forth conditions for collateral bonds. The first requirement, in Section 806.12(f)(1) is that the regulatory authority keep custody of all collateral deposited by the operator. Without possession, the pledge of collateral may be nothing more than a hollow promise at the time of forfeiture, since securities may be sold to holders in due course under the Uniform Commercial Code without any recourse by the regulatory authority to whom they were pledged.

The second requirement is that the collateral or securities be valued at current market value and not face value. Bonds may be discounted or otherwise have different values not at all related to the face value of the collateral. In order to properly assess the value of a bond related to the amount rquired, it is necessary to evaluate it at the current market value. If the market value falls while in the possession of the regulatory authority, additional collateral should be required.

The third requirement relates to certificates of deposit and provides that such certificates of deposit must be assigned to the regulatory authority upon the books of the bank issuing such certificates. The assignment on the books of the bank is essential in order to validate the regulatory authority's control over the certificate, not merely for bond forfeiture, but also to protect it against third-party creditors who might try to attach to such collateral depositied with the regulatory authority. A commenter suggested that the regulations provide that interest on these certificates be transmitted to the permittee. The regulations were not changed as suggested because under normal banking procedures the Office assumes that any accrued interest belongs to the owner of the certificate and will be paid directly to him unless alternate arrangements are established in the indemnity agreement.

The fourth requirement is that individual certificates of deposit shall not exceed the amount of $40,000 or maximum insurable amount as determined by the FDIC or/and FSLIC. The maximum of $40,000 was selected because it is the maximum amount insured by FDIC or by FSLIC. The last phrase was added in response to a comment, which would provide an opportunity to adjust if FDIC and FSLIC change their requirements.

The fifth requirement is that banks issuing such certificates of deposit waive all rights of set off or liens against the certificates. Under banking law, a bank does have a right of set off against deposits unless it is waived. In most circumstances an operator will go to a bank from which it has borrowed money to purchase these certificates

of depost in order to do business with one bank. If the bank fails to waive its right of set off, or its right to a lien, they may well maintain a prior right upon the the failure of permittee because of prior obligations to the bank. In most circumstances, the inability of an operator to pay creditors would leave the bank in first position to take the certificates. The regulatory authority must always be in first position to take the certificates upon default and not subject to any other prior creditor claims.

The sixth requirement for collateral is that certificates of deposit be automatically renewable. Some certificates may provide for maturity terms as little as six months of a year or for as long as eight years. If the regulatory authority does not hold automatically renewed certificates, it would be necessary for it to keep passing back and forth certificates, getting new ones at every point of maturity or risk the possibility that matured certificates would be paid out to the owner. The constant changing of these certificates would be an intolerable administrative burden whereas no burden results from the requirement that they be automatically renewed.

10. Section 806.12(f)(7) provides that the regulatory authority will require the applicant to deposit sufficient amounts of certificates to assure that the certificates can be liquidated prior to maturity for 100 percent of the required bond amount. One of the implicit limitations on certificates of deposit is the requirement by the Federal Reserve that a penalty be assessed against such certificates of deposit for withdrawal prior to maturity. This penalty is a 90-day amount of interest that would otherwise be earned by the certificate. If a certificate is cashed prior to maturity, the bond or certificate could be valued, because of the penalty, between 92 percent and 95 percent of its face value.

11. A few commenters requested the addition of a letter of credit to the bond criteria. The alternative presented by the commenters was to insert the letter of credit using the following language change: "An irrevocable letter of credit in a form acceptable to the regulatory authority, on any bank organized or transacting buiness in the United States, if the applicant so chooses." Other alternatives considered were not to include letters of credit or to include a limited letter of credit. The chosen alternative was to add the letter of credit to the definition of collateral bond and to add conditions in a new Section 806.12(g), emphasizing the irrevocable nature of the obligation during the life of the mine. Also, the language was amended in Section 806.12(f) to exclude letters of credit from that Section. This concept was accepted because a letter of credit, irrevocable during the life of the mine and automatically payable upon forfeiture by the regulatory authority, unless released first under part 807, offers the same fund for the completion of reclamation as a surety bond. In order to establish approximately similar guarantees of payment, the same requirement restrictions applicable to surety companies in Section 806.12(e) (3), (4), (6), and (7) are also to apply to banks offering letters of credit.

§ 806.13 Replacement of bonds.

1. Section 806.13 sets forth regulations in regard to replacement of one type of performance bond with other acceptable forms. Surety, collateral or self-bonds are interchangeable, providing that the criteria for each is met.

2. The proposed regulations had specified in Section 806.13(b) that no operator may replace existing surety or collateral bonds with a self-bond. Many comments were received stating opposition to this provision because Section 509(c) of the Act allows for self bonding. It was noted that the regulatory authority does not have the statutory authority to deny an applicant the right to substitute a self-bond for a surety or collateral bond if he or she qualifies and if the regulatory program provides for self-bonds.

Alternatives considered were deleting the entire Section, modifying the provision to allow replacement with a self-bond, or adapting the provision as proposed. It was decided to modify the provision by changing the language so that the regulatory authority may allow replacement of a collateral or surety bond with a self-bond, providing the self-bonding requirements in Section 806.11(b) are met. Section 509(c) of the Act does not restrict replacement with self-bond, and the purpose of the performance bond is to assure compliance with reclamation obligations. Therefore, if the operator meets self-bonding requirements, no justification exists to deny that option.

§ 806.14 Terms and conditions for liability insurance.

1. Section 806.14 provides the terms and conditions for liability insurance. The authority is derived from Section 507(f) of the Act. Section 806.14(a) sets forth the minimum amounts for coverage. Several commenters suggested deleting the minimum insurance coverage because it is not addressed specifically in the Act. However, the Office believes that minimum coverage, based on prevailing liability insurance practices, should be included to provide a floor for the exercise of regulatory authority discretion in determining an adequate amount of coverage. These minimums reflect industry practices and prevent individual states from allowing inadequate coverages which will fail to assure the public protection intended by Congress. Thus, discretion to increase coverages is preserved.

2. In response to a comment directed at the use of terms standard to the insurance industry, the language in Section 806.14(a) of the proposed regulations has been revised. The terms "bodily injury", "each occurrence", and "aggregate" have been substituted where appropriate. Another commenter suggested that inclusion for liability insurance for damage to water wells is beyond the scope of the Act. However, Section 508(a)(13) of the Act states that the ground-water quality must be assured and Section 507(f) of the Act states that the insurance policy shall provide for property damage in an amount adequate to compensate any persons damaged as a result of surface coal mining and reclamation operations. Therefore, inclusion of damage to water wells as a specific example of the kind of liability intended to be covered by the policy has been retained.

3. Section 806.14(b) specifies that the policy shall remain in effect for the life of the permit or any renewal thereof. One commenter suggested maintaining liability insurance for a period of 25 years thereafter in order to protect adjacent landowners from damages which may not become apparent for a number of years after reclamation is completed. While the commenter had valid reasoning, the suggestion was not accepted because a 25-year extension is beyond the scope of the Act and would create problems in determining risk. Additionally, protection of adjacent landowners would be limited because the burden of proof will usually be on the victim.

4. Section 806.14(c) requires notification to the regulatory authority whenever substantial changes are made in a policy. A commenter declared this to be beyond the scope of the Act, and suggested it would result in regulation of the insurance industry and concluded that the provision should be omitted. The provision has been retained because it establishes an administrative procedure allowing the regulatory authority to be sure that the permittee will always maintain minimum coverage. The Office believes that this is not an effort to regulate the insurance industry, but rather a requirement that the permittee keep the regulatory authority informed regarding its insurance coverage.

5. Section 806.14(d) recognizes that the permittee may qualify under State self-insurance requirements in lieu of a public liability policy. Such State requirements must be included in the

regulatory program and approved by the Secretary in order for them to apply. This is necessary if permittees are to continue to have this option during periods of Federal enforcement of a State program, or under a Federal program.

PART 807—PROCEDURES CRITERIA AND SCHEDULE FOR THE RELEASE OF BONDS

Part 807 adopts procedures criteria and a schedule for the release of performance bond liability and the termination of permits after completion of all liability periods required by law. The authority for this part is found in sections 102, 201(c), 501(b), 503, 504, 507(f), 509, 519, and 701 of the act.

Section 807.11 of the regulations is based on section 519 (a), (b), (d), (e), (f), (g), and (h) of the Act. The basic structure outlined in Section 519 for bond release is: (1) application, Section 519(a); (2) public notice, Section 519(a); (3) opportunity for objections and evaluation, Section 519(f); (4) inspection and evaluation of the site by regulatory authority, Section 519(b); (5) informal conference if provided for in the regulatory program, Section 519(g); an opportunity for a public hearing prior to release of the bond, Section 519(g); (6) regulatory authority decision and notice of its decision, Section 519 (b), (d), and (e); and (7) right to appeal the regulatory authority decision, Section 519(d).

Since neither the Act nor the regulation as proposed were organized sequentially, this Section and the procedures set forth therein have been rearranged in the appropriate sequence.

§ 807.11 Procedures for seeking release of performance bonds.

1. With respect to section 807.11(a), a few commenters requested that a surety also be permitted to file a request for bond release. These comments have been accepted and the regulations rewritten to allow persons authorized by the permittee to file an application for bond release. This provision will allow the permittee and his or her surety, or the bank which issues a letter of credit, to establish a contractual relationship by which the permittee authorizes the surety or the bank to file an application for release on his behalf. In the proceeding which follows, the party requesting release will always be the permittee, but by consent of the permittee the surety can be authorized to pursue the action. In order to accomplish the result desired by the surety company commenters, it will be necessary for them to secure the written consent of the permittee prior to his or her disability or incapacity which they fear might deprive them of a mechanism for being released from their obligations on the bond. In the absence of such consent, however, the Office does not think it is reasonable or appropriate to create a general right of sureties to file an application for release without the knowledge and consent of the permittee.

2. A few commenters suggested deletion of the requirement in Section 807.11(a)(1) to file for bond release only at appropriate times or seasons. These suggestions cannot be accepted since the regulatory authority is required to inspect and evaluate the reclamation work within 30 days of receipt of the completed application for release under Section 519(b) of the Act. This is possible only if the request is filed at an appropriate time or season to allow for proper evaluation. Without such a requirement, it could be impossible for the regulatory authority to exercise its responsibilities to evaluate the site and determine the adequacy of reclamation, and to conduct its site inspection within the 30-day time period allowed. For this reason, the Office has elected not to delete the requirement. Such a rule is both necessary and reasonable under the circumstances. In order to avoid any confusion regarding the proper season, the regulation requires the proper times to be stated in the approved reclamation plan.

The considered alternative would be to require the regulatory authority to hold the release request until the appropriate time or season. This was rejected since it is inconsistent with the statutory 30-day time period for the inspection.

3. Several commenters recommended deletion or reduction of the requirements in Section 807.11(b) for advertising the request for bond release in a local newspaper. These comments were not accepted because the Act requires both advertisement and most of the procedures in the regulations. The additional procedures included in the regulations are necessary to retain consistency with public participation provisions in other parts of the Act and the regulations in this Chapter.

4. Several comments on Section 807.11(b)(7) suggested clarification regarding who is entitled to submit written responses to the notice of application for release of bond advertised in the newspaper. These comments have been accepted, and Sections 807.11(b)(7) and 807.11(c) have been revised to make it clear that submission is limited to affected persons.

5. Section 807.11(c) provides that written responses may be submitted by any affected persons, as that term is defined in the regulation. The defintion reflects the criteria in Section 519(f) for determining who has standing to request a hearing.

6. A few commenters requested changing Section 807.11(d) to require the inspection for release of bond within 30 days of the notification and receipt of a completed application for release. These comments have been accepted since they are consistent with the language in Section 519(b) of the Act. The 30-day time period for the inspection begins when an application for a bond is completed. The application is not complete until the applicant has completed publication of all four notices and submitted proof of publication, along with a copy of the notice, to the regulatory authority. Receipt of these documents by the regulatory authority then triggers the 30-day time period. One exception to the 30-day requirement is made to allow for weather conditions which would preclude the kind of evaluation necessary for the regulatory authority to make a reasoned decision rather than an arbitrary decision based on speculation and surmise. The Office intends to avoid a deadline for action when, for example, an unseasonal snowstorm obscures terrain features or covers vegetation, and prevents an evaluation of restoration of original contour or revegetation.

7. With regard to Section 807.11(d) a commenter recommended that the 60-day time period established in Section 519(b) of the Act for action by the regulatory authority on the application for release be included in the regulations as a time limitation where no public hearing has been held. Since this time period is specifically set in the Act, the comment has been accepted and incorporated into Section 807.11(f)(2).

8. Several commenters recommended that an alternative vehicle for advertisement be included in Section 807.11(f)(ii) for those States not having an official State publication. These comments have been accepted. Where no such publication exists, the notice can be made in a newspaper of general circulation in the locality of the mine site. This change was made wherever there is reference to any official State publication, i.e., Sections 870.11(e)(1), (g)(1)(ii) and (2)(i).

9. A commenter suggested changing the requirement to notify the town or city nearest the mine site by also allowing the regulatory authority to notify the municipality in which the coal mine is located. This language is consistent with the Act so the comment has been accepted. The regulatory authority shall notify the municipality regarding its intention to allow release of bond liabiltiy at least 30 days prior to the release.

10. Strong objections to proposed Section 807.11 (d) through (h) were re-

ceived from a number of commenters representing mining industry, State, citizen and surety industry interests. In addition to the general lack of clarity and confusion caused by the proposed rules, mining industry commenters objected to the different procedures applicable to a hearing depending on whether it was requested by a permittee, in which case it was a "legislative-type" hearing, or an "objector," in which case it was adjudicatory. Citizen commenters objected to the prospect that once they had waived their opportunity for a hearing, the permittee could then request a hearing from which *"affected persons"* might be excluded. Each objection was well-taken and led to a major rethinking of the procedural elements of the Section. The initial text was based on a effort to give effect to every provision of Section 519 of the Act, but created confusion and unfairness by establishing different procedural rights for different parties. In rewriting the Section, the Office began with two fundamental assumptions drawn from the Act: (1) every *affected person* and the permittee have an equal right to an adjudicatory hearing if requested (Section 519(d) and (f)) and (2) a hearing requested by an *affected person* must be granted before the bond is released (Section 519(f)). Based on these assumptions, the Office reconstructed a procedural scheme which attempts to treat all parties equally and fairly, while adhering as closely as possible to the time limits for action imposed by Congress.

The revised scheme preserves the opportunity for filing objections and requesting a public hearing, but separates them in the sequence of events. The time for filing comments is limited by the 30-day requirement of the first sentence of Section 519(f) of the Act (30 CFR 807.11(c)). A request for an informal conference must be filed at the same time, provided the regulatory program contains an option for such a conference (30 CFR 807.11(c) and (d)). Within 60 days after receipt of a completed application for release (the date when the proof of publication of the four weekly notices is received by the regulatory authority), or 30 days after the close of the comment period, the regulatory authority will notify the parties of its decision to release the bond (30 CFR 807.11(f)(2)). If an informal conference procedure is provided in the regulatory program, then certain flexibility in the scheduling is allowed for holding the conference since such a conference might not be requested until the last day for the regulatory authority to give notice to the conference, conduct the conference, evaluate comments, make its decision and give notice to all interested parties. Limits on this time period will be left to the development of each regulatory program (30 CFR 807.11 (e) and (f) (3)).

After the decision of the regulatory authority, action which would allow the release of some or all performance bond liability shall be nothing more than a proposed release until *affected persons* have had an opportunity for a public hearing as required by Section 519(f) of the Act and 30 CFR 807.11(f)(5)(ii) and (g). If such a hearing is requested, it shall be adjudicatory, conducted in accordance with the procedures in Section 519(h), and commenced within the time and at the place required by Section 519(f) of the Act (30 CFR 807.11 (g) and (h)). The Office believes that this scheme is the most reasonable response it could devise to meet the valid concerns of the various commenters, within the framework of the Act.

A few suggestions in the comments were rejected. A request to require the regulatory authority to respond to specific requests for findings of fact and conclusions of law proposed by parties at the close of a hearing was not accepted. Such a procedural rule, while generally desirable, was not considered appropriate for this rulemaking. For hearings under Federal programs or the Federal lands program, such a requirement would be appropriate for consideration when the procedures of the Office of Hearings and Appeals are proposed. Under State programs, such matters are properly left to the discretion of the hearing authority. Also rejected was a request that the period for inspection and evaluation continue until 30 days following the close of the public comment period. While there may be advantages to such an extension, Congress has not allowed such an extended period. The period provided for in 30 CFR 807.11(d) does not require the inspection to be completed until 30 days after the receipt by the regulatory authority of the permittee's proof of publication of the newspaper notices. This should allow the public an opportunity to participate in the inspection if they act quickly to contact the regulatory authority.

§ 807.12 Criteria for release of bond.

§ 807.13 Schedule for release of bond.

1. Sections 807.12 and 807.13 of the proposed regulations have been rewritten and combined due to numerous comments concerning criteria and schedule for bond release. The alternative to rewriting and combining these two Sections was to attempt to make revisions within the framework of the proposed regulations based upon those comments which were accepted. However, the number and substance of the comments required that the Office generally rethink the overall content of the Sections, and accordingly it was necessary to rewrite them in order to properly organize and structure the regulations. As rewritten, these Sections are based on the concept that the permit area may be broken down into subareas and that these areas may be bonded incrementally during the term of the permit. Bond release also may be made in increments to allow partial release of the bond liability after the accomplishment of specific reclamation stages on the incremental areas. Bond liability on any incremental area is not fully released however, until the third reclamation phase is accomplished, at which time the acreage is deleted from the total permit area. The important concept is that while the filing and release of bond liability may be incremented, all the bond liability applicable to a permit extends to all acreage within the permit area. The amount of the bond is calculated on the basis of costs and not directly on acres. Amounts of the bond are released as reclamation phases are accomplished and remaining costs are correspondingly reduced, but any bond liability on a sub-area remaining at any time is available to deal with the entire permit area. After the acres are released from the permit area as provided for following reclamation phase III, there is no further liability for those acres under the remaining performance bond liability applicable to that permit. Any remaining liability would only apply to areas remaining within the permit.

The basis for extending liability to the entire permit area is that until all mining and reclamation activities are completed, the success of reclamation in achieving the required performance standards cannot be fully determined with respect to the protection and restoration of the hydrologic system. As mining and reclamation operations progress, the size of the affected area within the permit area increases. While these operations may be staged or done in increments across the permit area, the impact on both surface and ground water flow systems with regard to water quality and quantity is cumulative and may not be fully developed until mining operations have reached their fullest extent within the permit area.

2. The following represent the major concerns expressed in the comments on Sections 807.12 and 807.13 of the proposed rules.

A few commenters requested the mandatory release of portions of the bond according to the schedule in the regulations. These comments could not be accepted since the Act specifically states that the regulatory authority may release portions of the

bond after it has determined that the required reclamation phase has been accomplished, but must retain such liability in effect as would be necessary to complete any reclamation, restoration, or abatement work needed to comply with all requirements. This provides the regulatory authority with discretion in assessing the cost and degree of difficulty to complete any remaining reclamation, whether pollution is occurring or is likely to occur and the cost of abating such pollution, as required in Section 519(b) of the Act.

Since this review is specifically required by the Act, the bond release schedule and percentages cannot be made mandatory upon the regulatory authority. The requirement that the regulatory authority retain sufficient liability to complete remaining work is mandated by Section 509(a) of the Act, however.

3. Many commenters requested specific language allowing partial release of bond below the $10,000 minimum as stated in the proposed regulations. These comments were accepted and included in the rewritten regulations to conform with the incremental bonding provisions and the schedule for release of bond in accordance with the three major reclamation phases contemplated by Section 519(c) of the Act.

4. Many commenters requested clarification or deletion of the 25 percent release schedule set forth in Section 807.13(b) of the proposed rules. The regulations have been rewritten to clarify the mechanism for calculating the amount of bond to be released from each reclamation phase. As written the regulations in Section 807.12(b) establish three reclamation phases to define the periods when a permittee may seek release of bond liability. These correspond to the release of bond schedule established in Section 519(c) of the Act. The regulatory authority may release an additional 25 percent of the total bond liability pertaining to the area for which the release is sought, after revegetation has been established in accordance with the performance standards and approved reclamation plan. This provides that, at a minimum, 15 percent of the total bond will be retained until all surface mining and reclamation activities is determined.

As previously discussed, the effects of mining and reclamation are cumulative with regard to the hydrologic system, so that the remaining bond liability will be applicable to the entire affected area within the permit area to ensure the success of the reclamation work in protection of the hydrologic system.

5. A few comments regarding the bond release criteria suggested deleting the one-year release schedule requirement. These comments were accepted and the regulations changed to allow bond release applications to be submitted in accordance with a schedule approved as part of the reclamation plan submitted with the permit application, after completion of a reclamation phase on an approved area for the incremental release of bond liability.

6. One commenter suggested deleting the topsoil replacement from the regrading requirements for the 60 percent release schedule of Section 519(c) of the Act. This comment was not accepted since spreading topsoil is a grading operation which should be approved for the proper depth and distribution of the topsoil prior to vegetating. The inspection for bond release will determine whether the topsoil has been properly spread.

7. A commenter suggested adding "planting" to the 60 percent schedule. This comment was not accepted since planting operations are distinct and possibly not coincident with regrading. The regraded topsoil should be approved prior to the planting and revegetation operations.

8. A few commenters suggested including criteria for evaluating revegetation in the bonding regulations. These comments were not accepted since such criteria are included in the performance standards. The bonding regulations need only refer to these standards, not reiterate them.

9. A few commenters suggested changing the release schedule from 60, 25, 15 to 40, 20, 10, 10. These comments were not accepted since the Act, in Section 519(c), provides that up to 60 percent may be released after backfilling and regrading, based on the discretion of the regulatory authority on a case-by-case review.

10. A few commenters suggested adding language in the criteria referring specifically to other laws and regulations. It is not always possible to refer throughout the regulations to other laws and other regulations. However, the bonding regulations refer, where appropriate, to the permit requirements, performance standards, requirements, of the Act.

11. A few commenters suggested changing the requirements for impoundments to "silt dams as impoundments." This was not acceptable since the resulting definition would be too restrictive. Many impoundments resulting from coal mining practices, such as treatment facilities, require maintenance and protection against failure.

12. A commenter suggested adding language to the criteria for release of bond specifying compliance with all requirements of the Act. The statement of liability under the performance bond addresses the requirements for compliance with the Act and regulations and need not be stated again. Therefore, this comment was not accepted.

13. A commenter requested clarification regarding when the five-year period of responsibility begins. This comment has been accepted and the liability period clarified in the regulations.

14. A few commenters requested changing the standards for runoff quality for drainage from the revegetated area as proposed in Section 807.12(e)(2)(ii). These comments could not be accepted since treatment facilities must be maintained until the runoff from the permit area will not degrade the quality of the receiving stream below established stream quality standards.

15. A commenter suggested that the criteria for release did not adquately address the protection of the hydrologic system required in the Act and the performance standards. This comment has been accepted in that the rewritten rules provide the mechanism to retain adequate bond liability for this concern as determined by the regulatory authority (30 CFR 807.12(d)).

16. In response to comments regarding the problems which might arise out of the failure by the permittee or third parties who made commitments under 30 CFR 816.133 or 817.133, 30 CFR 807.12(d) has been rewritten to include a special provision requiring the regulatory authority to evaluate the additional costs it might incur in case of forfeiture and to retain such liability as may be necessary to cover those costs. Unlike other performance standards, the performance standards for revegetation (30 CFR 816.116 and 817.116) contain a special exception for alternate post mining land-use plans approved by the regulatory authority. The exception allows permittees to meet a less stringent revegetation test for reclaimed areas that will be covered from the elements within two years following completion of topsoiling. However, if the approved alternate land use is not implemented within the two years, it becomes necessary to comply with the full scale standards generally applicable to revegetation. Should the permittee or third parties default in their commitments under the alternate approved plan, and fail to obtain a permit revision under the Act, the regulatory authority would have to forfeit the bond and complete reclamation. Reclamation would require achieving full compliance with the revegetation standard, thereby resulting in greater costs than those anticipated by the permittee for the preparation of a development site.

PART 808—PERFORMANCE BOND FORFEITURE CRITERIA AND PROCEDURES

Part 808 adopts criteria and procedures for forfeiting performance bonds and determining the forfeiture amount as required by Sections 102, 201, 501, 503, 504, 509(a), and 519 of the Act. One commenter suggested that only those persons with valid legal interests should be able to petition for bond forfeiture. The procedures allowing petitions for bond forfeiture have been deleted. The regulation requires the regulatory authority to forfeit under certain circumstances, and allows discretion in initiating forfeiture in other circumstances. The regulatory authority may consider comments and petitions from persons with any interest in its decision-making process. If the regulatory authority refuses to forfeit a bond under circumstances where forfeiture is mandatory, any person with standing under Section 520 of the Act may sue to compel the regulatory authority to comply with the regulations and the Act. Therefore, since the Act does not require citizen participation in the forfeiture decision, the petition process in the proposed rules has been deleted.

§ 808.11 General.

1. Section 808.11 contains the general provisions for bond forfeitures. Section 808.11(a) requires the regulatory authority to forfeit all or part of a bond according to the criteria set forth in Section 808.13.

A commenter suggested requiring the regulatory authority to forfeit all of a bond in order to assure appropriate funding for reclamation. The Act, in Section 509(a), provides that the amount of a bond shall be sufficient to assure completion of the required reclamation work. This, in some cases, would not require forfeiture of the entire bond, especially where all of the area had not been affected or where some reclamation had been accomplished.

2. There were several comments directed at Sections 808.11(a) (1) and (2) of the proposed regulations, which had listed conditions under which forfeiture proceedings shall commence. The commenters objected to these provisions because of the redundancy with Section 808.13(a). The suggested revision was accepted and the deletions made in the final regulations. Therefore, the regulations were written to allow the regulatory authority to either forfeit the entire bond, or set the amount of bond forfeiture according to the cost of the reclamation work.

3. Several commenters suggested that the regulatory authority should have more flexibility in determining whether or not a bond should be forfeited. Although the regulations in Section 808.11(a) mandate bond forfeiture action by the regulatory authority under the conditions set forth in Sections 808.13(a) and 808.13(b), the regulatory authority has the discretion to withhold forfeiture if a binding compliance schedule is accepted by the permittee. It is always desirable to get the permittee or surety to comply with his reclamation plan if it is at all possible, because the cost to the regulatory authority is usually in excess of what it would cost a permittee or surety, as discussed previously in Section 805.11(b). Moreover, reclamation by the regulatory authority may be delayed for many years for a variety of reasons relating to collection upon the bond or contracting requirements to accomplish the reclamation. Therefore, this section provides an incentive for the permittee or the surety to come forward and agree to a compliance schedule, and allows the regulatory authority to engage in that option rather than compelling it to forfeit. The regulations were changed to include the surety in the agreement to secure its liability, as recommended by three commenters.

§ 808.12 Procedures.

1. Section 808.12 specifies procedures which the regulatory authority shall follow prior to bond forfeiture, in the event forfeiture of the bond is required by Sections 808.11 and 808.13. A commenter recommended that Section 808.13 be made applicable to Sections 808.11 and 808.12 because it states the specific criteria for forfeiture. This suggestion was accepted and incorporated into the regulations.

2. The procedures for bond forfeiture in the proposed rules provided that the regulatory authority send written notification to the permittee and, if it is a surety bond, to the surety, of the determination to forfeit and the reasons for such forfeiture. A few commenters suggested sending written notification to the permittee and surety, if applicable, and eliminating the question of receipt of notification. This suggestion was accepted and incorporated into the regulations. Several commenters suggested that the regulatory authority send written notification of the intent, instead of the determination to forfeit a bond, giving the permittee the opportunity to come forward with a compliance schedule. This step is unnecessary, for it would only cause delay and would not provide the permittee with any more rights than as presently written. The notice of forfeiture does not foreclose an opportunity for the permittee and regulatory authority to sign a compliance agreement, but it clearly puts the permittee on notice that agency action has been taken. A few commenters suggested giving the permittee 15 days after receipt of notification to set up a compliance schedule to correct a violation. There is no clear advantage to defining a time period, and, in fact, this could hinder the regulatory authority and permittee in setting up a compliance schedule.

3. Section 808.12(a)(2) requires the regulatory authority to advise the permittee and the surety, where applicable, of such rights of appeal that might be available. The surety was included, as recommended by several commenters. After notice is given in accordance with Sections 808.12(a) (1) and (2), Sections 808.12 (a)(3) and (b) allow the regulatory authority to proceed with collection on the bond as provided by law. A forfeiture by the regulatory authority is a final agency decision upon which an action for collection may be based, unless a stay of collection is obtained from an administrative or judicial reviewing authority as provided by applicable State or Federal law for such administrative actions.

4. Section 808.12(a)(4) requires the regulatory authority to defend any appeal that is filed. Several commenters recommended that this section be deleted because they allege it would require the regulatory authority to defend all actions, significant or not, and waste the regulatory authority's time. The Office believes it is necessary for the regulatory authority to pursue all appeals in order to assure that appeals are not neglected and rights of appeal not abused.

5. Section 808.12(c) received opposition from one commenter who suggested that the forfeited bond should be applied only to the bonded area. In response, a sentence was added to Section 808.12(c).

§ 808.13 Criteria for forfeiture.

1. Section 808.13(a) identifies four areas where forfeiture would be mandatory. Several commenters suggested giving the regulatory authority more flexibility to determine forfeiture by changing "shall" to "may". The Office believes the regulations will give the regulatory authority sufficient flexibility as provided in Sections 808.13(b) and 808.11(b) and, therefore, the use of the word "shall" is the preferred language.

2. The first set of requirements for which forfeiture is required are standard to the bonding industry. In those four circumstances the bond shall be forfeited because the permittee has indicated an inability to comply with the Act in a major respect, unless it is possible to reach some compliance agreement and schedule with the operator. Some commenters suggested changing Section 808.13(a)(2) so that bond for-

feiture would be mandatory only when the permittee has substantially failed to conduct surface mining and reclamation in accordance with the regulations. Because the permittee is given the chance to set up a compliance schedule to correct violations, this addition is not necessary. One commenter claimed that revocation of the permit should not dictate bond forfeiture. In response, Section 818.13(a)(3) has been amended to include the stipulation that the regulatory authority shall forfeit the bond if the permit has been revoked, unless the permittee or surety, where applicable, assumes liability for completion of reclamation work under a compliance agreement. This alternative is desirable because the permittee or surety can do the reclamation work, at much less cost and generally in less time than the regulatory authority, as previously discussed.

Section 808.13(a)(4) was added in response to comments which suggested that bond forfeiture should be required if the permittee fails to comply strictly with the compliance schedule. This provision will deter the regulatory authority from agreeing to successive compliance schedules, while the operator continually violates the conditions of each schedule.

3. Section 808.13(b) provides for discretionary forfeiture of a bond. These provisions reflect problems that have occurred with bond forfeiture among the States. They require both a business failure and the inability of the permittee to comply with the Act. Some commenters suggested a rewording of Section 808.13(b)(1), because bonds may be sound even though the permittee has failed in business. The commenters also pointed out that having a petition of bankruptcy filed against the permittee does not mean that the permittee is bankrupt. In response, Section 808.13(b)(1) has been rewritten to eliminate bond forfeiture if the permittee has a petition for bankruptcy filed against him, even though a bankruptcy proceeding may not necessarily mean the permittee's bond is insecure. This Section allows the regulatory authority to use bankruptcy or other failure as a basis for agency action if deemed necessary in order to protect the regulatory authority's interests. A few commenters suggested deleting Section 808.13(a)(2), because of the above discussion. Again, the regulatory authority may use this as an indication that the obligations on the bond are potentially insecure, but the provision does not make forfeiture mandatory. A provision was added to Section 808.13(a)(3) to allow a permissive bond forfeiture only after the permittee has been given an opportunity to demonstrate or prove that the operation will be conducted in compliance with the Act. This provision places the burden on the permittee to prove that he can comply even though either of the conditions in Section 808.13 (b)(1) or (b)(2) have occurred. The possibility of a bond forfeiture gives the regulatory authority a certain amount of leverage to compel a successor in interest, such as a receiver in bankruptcy, to comply with the legal requirements imposed upon the permittee for the operation.

§ 808.14 Determination of forfeiture amount.

1. Section 808.14 contains two bases for determining the forfeiture amount. A few commenters suggested changing "shall" to "may" in order to give the regulatory authority more flexibility in determining the amount of forfeiture. Because the regulatory authority may choose to forfeit either the entire bond or a portion sufficient to cover the cost of reclamation, the Office believes the word "shall" is not restrictive and, therefore, has not changed the regulation. A few commenters suggested Section 808.14 be deleted, because it is too difficult to determine the exact amount of a bond necessary for reclamation, and, by requiring the entire amount of the bond to be forfeited, the regulatory authority would be assured of having sufficient funding for required reclamation. These comments were not accepted because the necessary reclamation work involved may require only a portion of the bond amount and the amount is left to the discretion of the regulatory authority.

2. Section 808.14(b) provides a mechanism that may be of greater practical benefit to the regulatory authority when it must act expeditiously. This Section allows the regulatory authority to forfeit the entire amount of the bond to which liability is attached to complete the required reclamation work. The proposed regulations required the regulatory authority to return the unused portion of the bond to the permittee or surety. This provision received opposition from several commenters because they felt it denied States the right to keep the remainder of the bond, which could be used as a reclamation fund or as a method to penalize the permittee for not meeting the conditions of the bond. Another commenter suggested that remaining funds after reclamation be retained until the standards for measuring revegetation have been met, thus insuring proper reclamation. A few commenters suggested eliminating Section 808.14(b) because forfeiting the entire bond would be an unfair penalty for the permittee and surety. In response, the requirement that the regulatory authority return the remainder of the unused bond was deleted. Therefore, as adopted Section 808.14 allows the regulatory authority to either forfeit all or part of the bond and return the unused portion of the bond if they so desire.

PART 809—BONDING AND INSURANCE REQUIREMENTS FOR ANTHRACITE SURFACE COAL MINING AND RECLAMATION OPERATIONS

This Part sets forth the general requirements for bonding and insuring anthracite surface coal mining and reclamation operations for States which regulated anthracite coal mining with environmental protection standards in existence as of August 3, 1977. Section 529 of the Act, from which the authority for this Part is derived, is believed to only cover and thereby, exempt, Pennsylvania from certain provisions of the Act and this subchapter. As a result, this Part is only applicable to persons engaging in or seeking to engage in anthracite surface coal mining and reclamation operations in Pennsylvania.

§ 809.12 Requirements.

Section 809.12 sets forth the requirements for bonding and insuring anthracite coal mining operations in Pennsylvania. Basically, Section 529(a) of the Act requires that all anthracite operations be subject to the general bonding provisions in Sections 509 and 519 except for the period of revegetation responsibility and the specified bond limits. In those cases, Pennsylvania State law, regulations and administrative guidelines will apply. Section 809.12(a) provides the statutory exemption and directs the Pennsylvania regulatory authority to apply its laws, regulations, and guidelines to bonding limits and liability periods for anthracite operations.

There were no comments received in reference to the section, and, therefore, the regulations remain unchanged.

SUBCHAPTER K—PERMANENT PROGRAM PERFORMANCE STANDARDS

The general structure and intent of this Subchapter, together with an explanation of alternative structures considered, is contained 43 FEDERAL REGISTER 41734–41735. That discussion is hereby incorporated by reference in this preamble.

As originally proposed, Subchapter K contained three additional Parts—811, 812 and 821. (See 43 FEDERAL REGISTER 41873–41922, September 18, 1978.) Part 811 has been deleted because it was redundant. All its substantive provisions are contained in Subchapter C. Part 812 was an index which has been deleted in response to comments, which requested a broader

alphabetical subject index. Such an index has been prepared as an appendix to these regulations. OSM expects this appendix to be published in the FEDERAL REGISTER shortly after publication of these rules. No substantive change is intended by the deletion of Parts 811 and 812.

Part 821 would have provided an exemption procedure for mines in Alaska. This Part was deleted because OSM felt that the special problems of Alaska would be adequately resolved under Subchapter C by application of the "State window," if a State program is approved, or by consideration of Alaska's unique climatological and geological problems by the Secretary, before a Federal program is implemented. In any case, the statutory authorization for the variances proposed by Part 821 will have expired before or shortly after a permanent regulatory program is adopted for Alaska. Under Section 708(d) of the Act, variances could not be granted by the Secretary after August 3, 1980, at the latest.

Many comments were received suggesting that OSM avoid specific design standards and instead adopt regulatory goals and allow operators to achieve the goals as they choose. These commenters criticized what they sometimes called the "cookbook" approach. In each of the performance standards for which the point was specifically made, the preamble addresses the specific issue. The discussion at this point addresses the issue in general.

To a substantial degree, the regulations as proposed, and to a larger degree as adopted, in fact establish goals rather than tight design standards. Moreover, when design standards are adopted they usually provide substantial flexibility to the operator.

For example, the standards in 30 CFR 816.45–816.47 and 817.45–817.47 for controlling sedimentation go beyond merely establishing effluent limitations. They do so because effluent limitations are a less successful regulatory tool for constantly moving coal mining operations than for fixed industrial plants. In requiring certain operational practices beyond the effluent limitations, the regulations do not adopt a rigid "cookbook" approach but prescribe a series of alternatives that leave the operator broad flexibility to design an operational sediment control system to suit the particular site and the operator's capabilities.

Section 816.45 explicity states the regulatory goals and lists the major designs and operational techniques which an operator can adopt to reduce the need for treatment. Section 816.46 requires a final sedimentation pond but grants broad flexibility to the operator to design the pond efficiently in relation to related sediment control practices. For a more complete discussion of the flexibility and efficiency of sediment control requirement, see the Preamble for Sections 816.45–816.47 and Sections 817.45–817.47.

An example of design standards with less flexibility than sediment control are the regulations dealing with head-of-hollow and valley fills. Nevertheless these regulations contain more flexibility as adopted than as proposed, while at the same time providing equivalent public safety and environmental protection. As proposed, there were to be essentially two different construction techniques for excess spoil. The first was the fill constructed with a rock underdrain and all water diverted off or around the fill. The second was a fill constructed with a rock chimney core and water diverted to and through the rock core. As adopted, the regulations provide for four different construction types: (1) for flatter areas, only stability and sediment control goals are prescribed and the engineer can design any structure that meets those goals; (2) the rock underdrain type; (3) the rock chimney core type; and (4) a dumped, homogeneous fill made of at least 80 percent durable rock.

The Office believes that design specificity is necessary in many places, especially where risk of injury to public safety or the environment is the greatest. For instance, in the design of fills on steeper slopes, failure is a real risk and could be such a catastrophic event that conservative, specific design standards are necessary. Fills must be designed and constructed to last perpetually, since maintenance (after bond release) will not necessarily be provided, as in the case of public highway fills. Also, the state-of-the-art in fill design has been evolving slowly, with most engineering innovation displayed only in the last couple years. On flatter slopes failure is neither such a risk nor as serious an event should it occur; therefore increased flexibility is appropriate.

On the other hand, specific design requirements may impede the operator's ability to reduce to a minimum the cost added to his operation by the regulations and may impede innovation. The Office believes that the flexibility contained in the regulations adopted reduces these adverse effects, and that any impediment to innovation is reduced to neglible by the experimental practices regulations at 30 CFR 785.13.

Thus, the question of "goals versus design standards" is one of balancing the need for increased certainty of protection against increased flexibility for the operator. OSM has in almost all cases supplied substantial flexibility even where design standards are provided. The Office believes that the balance struck by the regulations adopted is correct and will provide a basis for the protection of public health and safety and the environment while recognizing the importance of an efficient and productive coal industry.

PART 810—PERMANENT PROGRAM PERFORMANCE STANDARDS GENERAL PROVISIONS

This Part is intended to provide an introduction to Subchapter K. It sets forth the general purpose of the Subchapter, the responsibilities of persons and agencies in connection with the Subchapter and its general applicability. To the extent more specific or contradictory provisions are found in Parts 815–828, those other provisions shall control.

Section 810.1 explains that Subchapter K applies to all coal exploration and mining under regulatory programs. The differences in language from the version proposed September 18, 1978 (43 FEDERAL REGISTER 41873) are intended for clarification only.

Section 810.2 explains the purposes to be achieved by the requirements of Subchapter K. All changes made in this Section since the version proposed in the September 18, 1978 FEDERAL REGISTER were made in response to comments and are discussed below.

Section 810.3 states that the role of the Secretary of the Interior under the Act is to approve or implement performance standards and design criteria for regulatory programs. This role is explained in Sections 503(b) and 504(a) of the Act. The importance of the differences between performance standards and design criteria is discussed in the preamble discussion for Section 701.11(e) relating to preexisting, nonconforming structures, and the reader is encouraged to review that discussion for a fuller understanding of this Subchapter.

Section 810.4 enumerates the roles of the Director, the State regulatory authority and the person conducting the regulated activities. The language is slightly changed from the version of Section 810.4 proposed September 18, 1978. The Section as promulgated eliminates unclear references to the Assistant Secretary, Energy and Minerals. OSM felt that mentioning that officer without setting forth the relationship of the Director to the Secretary or other Interior Department offices was more misleading than it was helpful. All changes in this Section are clarifications of the general introductory language.

A section-by-section analysis of concerns raised by the public comments and the review of the proposed regula-

tion conducted in response to those comments follows.

A commenter suggested that 810.1 be revised so that Federal lands governed by Section A of the Federal Coal Leasing Amendments Act of 1975 (90 Stat. 1085) would be exempt from the performance standards of Parts 816 and 817. This revision was unnecessary since the issue is dealt with in the Federal lands program, Subchapter D.

One commenter felt that Section 810.2(a) was superseding the Federal Coal Mine Health and Safety Act of 1969. Section 702(a) of the Act provides that the Act not be construed to supersede or modify the Federal Coal Mine Health and Safety Act of 1969. Section 515(b)(12) of the Act gives OSM specific authority to be concerned with "the health or safety of miners." Section 810.2(a) does not supersede the Federal Coal Mine Health and Safety Act of 1969, but complements it.

A commenter contended that Section 810.2(h) was without statutory authority and should be deleted. This contention was rejected. Section 810.2(h) is authorized by Section 522(a)(3)(B) of the Act. However, Section 810.2(h) has been revised to implement all of the wording in Section 522(a)(3)(B) of the Act.

Several comments suggested that a new paragraph be added to Section 810.2 which assures that a balance will be reached between protection of the environment and agricultural productivity and the nation's need for coal. This suggestion was accepted. Section 102(f) of the Act states that one of the purposes of this Act is to strike a balance between protection of the environment and agricultural productivity and nation's need for coal as an essential source of energy. The addition of paragraph (j) to Section 810.2 helps more completely characterize how this Subchapter seeks to accomplish what Congress intended.

A commenter felt that Section 810.3 should be revised, since coal exploration operations on Federal lands are not governed by the Act. Coal exploration operations on Federal lands are governed by Section 4 of the Federal Coal Leasing Amendment Act of 1975 (90 Stat. 1085). The issue raised by the commenter is already covered in the Federal lands regulations, Subchapter D. A revision of Section 810.3 would not add anything to the regulations, since this Subchapter does not, by its terms, apply on Federal lands. The extent to which these standards will apply on Federal lands is set forth in Subchapter D. Accordingly, the commenter's request was rejected.

Concern was expressed that Subchapter K does not specify whether operators must comply with both general performance standards (Parts 816 and 817) and applicable special standards (Parts 818–828). It was noted that the interim performance standards do have such a specification at 30 CFR 716.1(a)(2). In order to avoid ambiguity in interpretation of the permanent program performance standards and to ensure that all operations comply with all relevant performance standards, Section 810.11 was added to specify that Parts 816 and 817 apply to any operation unless specifically exempted in Parts 818–828.

PART 815 PERMANENT PROGRAM PERFORMANCE STANDARDS—COAL EXPLORATION

Part 815 contains minimum performance requirements applicable to persons engaged in coal exploration which substantially disturbs the natural land surface. This Part is closely related to Part 776 (Coal exploration notices and approvals) and the definitions of "coal exploration" and "substantially disturb" contained in Section 701.5. The reader should review the preamble discussion of those provisions, as well as the language of those regulations, for a complete understanding of the permanent program's effect on coal exploration.

The purpose of this Part is to ensure that coal exploration is conducted in a manner which results in minimum environmental harm. OSM has attempted to balance the need to allow exploration to proceed so that the Nation's energy needs and the Act's are balanced, against the risks of environmental damage. Under the Act, exploration will continue to occur on lands where mining is prohibited under Subchapter F. Since many lands unsuitable for mining are fragile, special precautions to preserve fragile resources are required. The brevity of this Part reflects OSM's intention to focus its regulations only on those activities which present the greatest potential risk to the environment and to frame the final rules in terms of general applicability.

One commenter suggested that Part 815 be deleted entirely on the grounds that Section 512(a) of the Act states that exploration is to be conducted under "exploration regulations issued by the regulatory authority." The commenter argued that OSM is not the regulatory authority at this stage of the implementation of the Act, and therefore this Part is beyond OSM's authority. OSM disagreed with this commenter's argument, so Part 815 has not been deleted. Section 502(b) of the Act requires the Secretary to promulgate regulations "establishing requirements for . . . approval of State programs." Section 512(a) requires that each State's Federal program contain exploration requirements, including "at a minimum . . . provisions for reclamation in accordance with the performance standards of Section 515 . . . ," OSM has promulgated this Part to set forth the minimum requirements which must be contained in a State or Federal program before it will be approved. The regulations of a regulatory authority will be enforceable under the Act, once they have been approved by the Secretary.

Other commenters contended that OSM adopted a "cookbook" approach in the proposed regulations that would result in greater harm to the environment than would occur if its regulations did not have to be met. These commenters recommended an "engineered option" approach whereby the performance standards can be met by the operators in any way they choose just as long as the standards are met. A related comment requested that this Part only contain what is required under the Act. OSM decided that Section 512(a) of the Act requires the Federal government to indicate, in these regulations, how the requirements of the Act are to be met by States in their program submission, and by persons engaged in coal exploration. While general standards have been promulgated where appropriate (for example, 815.15(f)(2)), in instances where enforcement would be aided or environmental risk reduced, more specific requirements have been enacted (for example, 815.15(k)). Also see the preamble discussion to Section 701.11 of these rules. OSM does not believe Part 815 exceeds either its authority or its responsibilities under the statutory scheme.

One commenter requested that the requirement of this Part should reflect regional climatological differences. The final regulations of this Part have not been changed in response to this request, since OSM believes that the authority contained in Section 731.13 and in Part 736 to consider regional differences will allow each State and Federal program to adequately reflect special needs resulting from unique climatological or geological factors.

Another commenter felt that under the regulations, this Part did not allow sufficient flexibility. In responding to these comments, OSM has attempted to frame the requirements broadly, so that they are of general applicability, and permit those engaged in exploration to gear their activities to the needs of the operation and still achieve the environmental protection necessary to fulfill the Congressional intent of Section 512 of the Act. See, for example, Section 815.15 of the final regulations on "environmental

performance standards for coal exploration."

Several comments suggested that OSM consider applying the performance standards of Part 815 only to operations in which over 250 tons would be removed. OSM was offered no technical basis to show that the environmental damage resulting from exploration which removes less than 250 tons, is any less than the damage from exploration where more coal is extracted. In fact, Section 512 of the Act makes no distinction between the performance standards to be applicable to over-250-tons exploration and under-250-tons exploration. The only difference is whether one needs prior written approval from the regulatory authority before commencing operations. The final committee report on the Act also makes it clear that performance standards are to apply to operations under 250 tons (H. Rep. No. 95-218, p. 173).

§ 815.1 Scope.

Section 815.1 states the scope of the Part. The language has been modified from the proposed version (43 FEDERAL REGISTER 41878). In addition to nonsubstantive changes made for clarification only, the language has been revised in several significant ways. The limitation of the Part to activities outside a permit area has been deleted because, after revision of the rest of the Part in response to comments as discussed below, the standards were found in each case to have been included within the performance standards for mining. Since all those standards apply within the permit area, and since the language of Part 815 provided sound guidance to how those requirements might be read in an exploration context where the exploration was proceeding ahead of the mine cut, the limitation on the scope was deleted.

Several commenters felt that Part 815 should be applicable only to exploration operations which substantially disturb the natural land surface. These comments were accepted and the language of Section 815.1 was revised accordingly based upon the explanation in the final report which accompanied H.R. 2 and the plain meaning of Section 512 of the Act. This explanation clarified that the detailed regulations assuring compliance with the performance standards must apply to all exploration operations which substantially disturb the natural land surface. Section 815.1 was further modified to clarify that the performance standards in Section 815.15 were the minimum standards which exploration operations must follow and that the regulatory authority may further require that the operations comply with the performance standards in Part 816. OSM incorporated this additional wording into Section 815.1 to assure that exploration operations do not result in irreparable damage to the environment or imminent danger to the health and safety of the public.

§ 815.2 Objectives.

Because of the change in Section 815.1, paragraph (a) of Section 815.2 was also rephrased to consider only exploration operations which substantially disturb the natural land surface.

A commenter proposed that paragraph (b) of Section 815.2 be revised so that "environmental degradation" need not be prevented during the conduct of coal exploration operations. This commenter asserted that only those environmental degradations which leave a permanent harm do "real damage." The Office rejected this proposal because serious environmental degradation can occur during, as well as following, coal exploration operations (Grim and Hill, 1974, pp. 17, 22, and 26). Moreover, since the main purpose of coal exploration is to document the commercial quantities of a deposit, activities undertaken during the process of exploration need to be considered as part of the total costs development (Pfleider, 1968, p. 29). By controlling environmental degradation during exploration, total reclamation costs can be better managed. Accordingly, the performance standards in Section 815.15 of the final regulations were developed to assure that degradation of environmental quality does not occur during coal exploration operations because of exploration activities.

Other commenters asserted that the special category and exemption for exploration of less than 250 tons should be eliminated because exploration of any size or amount can cause extensive environmental harm, especially in the steep slope areas of Appalachia. For these commenters, a ton limitation on the amount of coal removed does not necessarily reflect the size or intensity of a disturbance since a very small area causing little environmental harm or a very large area causing extensive harm are both possible with the removal of less than 250 tons. These commenters contended that any coal exploration operation should be required to first obtain written approval and abide by the same environmental standards for explorations removing more than 250 tons of coal. Other commenters contended that Part 815 fails to reflect the limitation contained in Part 776 which provides that written approval need be obtained only in operations in which more than 250 tons of coal are intended to be removed in any one location. The Office agreed that the issue was unclear and modified Section 815.11 so that it parallels the requirements of Part 776. The revision made to Section 815.11 clearly indicates that it is not the intention of the Office to require approvals of all exploration without regard to the 250 ton removal criterion required by Section 512(d) of the Act, but only if more than 250 tons of coal are to be removed from one location during exploration. However, Section 815.11 of the final regulations also clearly requires that all coal exploration operations, regardless of size, which substantially disturb the natural land surface shall comply with the environmental performance standards set forth in Section 815.15.

§ 815.11 General responsibility of persons conducting coal exploration.

Comments received on proposed Section 815.4 are discussed earlier in this preamble together with comments received on Part 776. Requirements proposed on September 18, 1978 as Section 815.4 were moved to 776. Section 815.4 has been deleted. The reader is referred to the preamble discussion on Sections 776.11 and 776.12 for further explanation.

Several commenters contended that Sections 815.11 and 815.4, as proposed, which provided that a person intending to conduct coal exploration operations file a notice of intent to explore, were beyond the scope of the Act. Other commenters objected to the requirement of prior notice of intent for exploration operations removing less than 250 tons on the grounds that coring programs are generally recognized to have minimal environmental impact. For these commenters, prior notice of such programs would entangle a relatively simple operation with no history of environmental damage in an involved regulatory scheme. The Office agreed the proposed regulation needs clarification. In order to clarify the proposed regulation and reflect the intent of the Act, the addition of the phrase "which substantially disturbs the natural land surface" was included in the wording of Section 815.11(a) and (b). It should be noted however, that OSM believes that a core drilling program can cause substantial disturbance, which will require prior notification to the regulatory authority. By comparison, in most instances, aerial exploration alone will not cause the kind of disturbance requiring notification.

Several commenters contended that Section 815.11(a) of the proposed regulations did not reflect the limitation contained in Part 776 which provides that written approval need be obtained only in operations in which more than 250 tons of coal are intended to be removed "in any one location." Rather than limiting the criterion to a single location, proposed Sec-

tion 815.11(a) would have enlarged the concept to "exploration area." OSM agrees and has deleted the term "exploration area" from Section 815.11 of the final regulations. It was not necessary, as several commenters suggested, to amend Section 815.11 to include the words "in any one location" because under the final wording of the sections referred to in Section 815.11(a), the area to be explored is designated in the notice of intention to explore required under Section 776.11 for operations involving removal of less than 250 tons and, in the case of operations removing more than 250 tons, Section 815.11(b) specifies "in the area described by the written approval from the regulatory authority."

Several commenters contended that Section 815.11(b) of the proposed regulations would lead to undue interference in the process of coal exploration operations if "any agent or employee" of the regulatory authority was given the authority to request from the person conducting the coal exploration operations the receipt or written approval of the regulatory authority for undertaking the activities granted under Section 776.12. Some commenters wanted proposed Section 815.11(b) amended so that the agent or employee of the regulatory authority would be required to present credentials to the person conducting coal exploration before being allowed to see the receipt or written approval of the coal explorer. The Office agreed with the above comments and has rewritten the requirements of proposed Section 815.11(b) in Section 815.13 of the final regulations so that the written approval to undertake activities granted under Section 776.12 will be "available for review by the authorized representative of the regulatory authority or the Office upon request." Authorized representatives of the regulatory authority do carry identification which the coal explorer can demand to see. It is not, therefore, necessary to amend the regulation to require presentation of such credentials.

Section 815.11(a) of the proposed regulations would have required an explorer to carry a receipt showing that the required notice of intention to explore had been filed. Some commenters contended that Section 815.11(a) of the proposed regulations was ambiguous as to what type of receipt from the regulatory authority would be required. Some commenters contended that the requirement of a receipt would add an unnecessary burden. These commenters argued there are various other means of establishing, by written documentation, that an operator has in fact complied with the notice requirement of the Act. Furthermore, these commenters contend that the proposed rule would have created a process which is tantamount to a permitting procedure because unless and until an operator receives a receipt, he or she presumably would not be authorized to commence exploration. Other commenters contended that unless the receipt required by proposed Section 815.11(a)(1) is an automatic response to the filing of a notice, the regulatory withholding of a receipt as a means to require prior written approval of exploration involving less than 250 tons of coal contrary to Section 512(d) of the Act. These comments convinced the Office that proposed Section 815.11(a)(1) was not clear. Accordingly, the proposed Section 815.11(a)(1) requirement that the person conducting coal exploration possess a receipt has been deleted. Section 815.11(a) of the final regulations requires only that the person conducting coal exploration in which 250 tons or less of coal are removed shall file the notice of intent required under Section 776.12 and shall comply with Section 815.15.

§ 815.15 Environmental performance standards for coal exploration.

The philosophy of Section 815.15 is that any person who engages in coal exploration activities, which substantially disturb the natural land surface must conduct such activities with the least resultant damage to the environment. To accomplish this purpose, Section 815.15 explains minimum performance standards and design requirements which shall be required of persons who engage in coal exploration activities. Since these are minimum and flexible standards, coal exploration activities may, at the discretion of the regulatory authority, be further required to comply with the applicable performance standards and design requirements of 30 CFR 816-828 from which these minimums are generally derived.

Many comments were received on the proposed version of these regulations. In the process of considering these comments the Office has deleted, added, and rewritten substantial parts of the proposed regulations on performance standards for coal exploration. It became necessary, for the sake of clarity, to reorganize and renumber the regulations proposed on September 18, 1978. The table below indicates how the proposed regulations were reorganized into the final regulations.

Proposed Regulation	Final Regulation
815.12(a)	deleted.
815.12(b)	815.11(b).
815.12(c)	815.15(c)(1).
815.12(d)(1),(2),(3),(4),(5)	815.15(c)(2).
815.12(e)(1),(2)	815.15(d), (e).
815.12(f)	815.15(g).
815.12(g)	815.15(h).
815.12(h)	815.15(b).
815.12(i)	815.15(b).
815.12(j)	815.15(a).
815.12(k)	815.15(j).
815.12(l)	815.15(i).
815.12(m)	815.15(f).
815.13	815.17.
	815.15(c)(3)(new).
	815.15(c)(4)(new).
	815.15(k)(new).

Several commenters contended that Section 815.12 of the proposed regulations should be revised to apply only to coal exploration operations which remove more than 250 tons of coal. As discussed above in connection with Section 815.1, the language of Section 512 of the Act and the legislative history are clear in that the performance standards must apply to all exploration which substantially disturbs the natural land surface, no matter how many tons of coal are removed during or after exploration operations. Section 815.12 of the proposed regulations became Section 815.15 of the final regulations.

Proposed Section 815.12(a) has been deleted. Several commenters asserted that the requirement of proposed Section 815.12(a) of recording the coal removed in an exploration program that will not exceed 250 tons, seems needless since the projected total coal tonnage to be removed would be required as a part of the notice of intent to explore as defined in Section 776.11(a). These commenters asserted that so long as the coal tonnage is significantly below 250 tons and the proposed program is adhered to, the records required under proposed Section 815.12(a) of the proposed regulations would only burden the person conducting exploration with additional record keeping that would serve no useful purpose. Other commenters further remarked that in the case of more than 250 tons of coal being removed, the amount to be mined would be stated in the application for approval. Other commenters wanted to amend proposed Section 815.12(a) of the proposed regulation to require recording of coal removed "from a specific location" during coal exploration, since cumulative amount as stated in the proposed regulation is ambiguous and restricts large exploration activities even when there is no damage to the environment. Adding "specific location" to the regulation would stop mining under the guise of exploration. Other commenters contended that the requirement of proposed Section 815.12(a) that the operator record the "cumulative amount of coal removed during exploration" is inconsistent with Part 776 of the regulations and Section 512(d) of the Act, which provide that written approval needs to be obtained only in operations in which

more than 250 tons of coal are intended to be removed in any one location. These commenters argued that the cumulation requirement of proposed Section 815.12(a) and the use of an exploration area in Section 815.11(a) of the proposed regulations would circumvent the Congressional intent to establish a reasonable objective criterion of 250 tons and would tend to subject operators to inconsistent application of the 250 ton criterion, depending on the size of the area of exploration. Other commenters contended that difficulty will arise in trying to weigh each coal sample taken during a drilling program. These commenters alleged that excessive handling could adversely affect the coal quality analyses. Moreover, these commenters asserted that coal removed from a completed drilling program, even with as many as one hundred drill holes, would not exceed one ton, an amount far below the 250 ton limit. Requiring drilling operations to record the weight of coal removed would, according to these commenters, be unnecessarily burdensome. Other commenters argued that the amount of coal and the location from which that amount was removed are extremely sensitive types of information. If this information is available to the general public, it could affect the price of the subject tract and neighboring tracts. In addition, these commenters alleged that if a competitor knew the number and location of drill holes, and the amount removed from each hole, a simple calculation could determine the thickness of seams and, possibly, a close approximation of total reserves. This would substantially reduce the competitive edge of the company performing the exploration and would, for these commenters, be contrary to Section 512(b) of the Act. These commenters wanted proposed section 815.12(a) amended so that the amount of coal removed from each hole would be recorded and cumulated, but the operator would be required only to divulge whether the cumulative total of the operation is greater than or less than 250 tons, since any more detail would unnecessarily prejudice the competitive position of the operator.

OSM decided to delete proposed Section 815.12(a) from the final regulations based on the above comments and to be consistent with its decision to delete the term "exploration area" from Section 815.11(a) of the proposed regulations. The reader is referred to the preamble discussion in Section 815.11(a) for the reasons "exploration area" was deleted. OSM also decided to delete proposed Section 815.12(a) from the final regulations because the commenters convinced the Office that the record-keeping requirement is unnecessary, given the approval requirements of part 776. Merely limiting the record-keeping requirement to a "specific location," as suggested by some commenters, would not in itself stop mining under the guise of exploration. OSM believes that violations of Parts 776 and 815 are adequately addressed by Section 776.15(b) of the final regulations. The reader is referred to the preamble discussion on Section 776.15(b) for an explanation of the regulations covering violations of the coal exploration regulations contained in Parts 776 and 815. State regulatory authorities have, in the discretion given to them by the Act, the authority to require recording of the amount of coal removed, if they believe that it may help them prevent mining under the guise of exploration or for other legitimate purposes.

Section 815.15(a). A few commenters contended that the proposed version of Section 815.15(a) (proposed as 815.12(j)) was extremely vague in requiring that no habitats of "unique" value for fish and wildlife be disturbed. There was no definition of the word "unique" and no guidance for the operator. The commenters requested that this section either be deleted or specify types of habitats which must be protected. The U.S. Fish and Wildlife Service "strongly recommends" to OSM that the proposed Section not be changed. OSM decided to change the proposed regulation only to clarify its meaning. Therefore the final regulation expands the definition of "unique habitat" by including a reference to 780.16(b) of the final regulations. Coal explorers are clearly required to conduct their exploration operations so as not to damage important wildlife habitats. Coal explorers should contact their regulatory authority if they need assistance in determining whether their area of coal exploration may contain unique or high value habitats. The regulatory authority is required by Section 779.20 to be in contact with Federal and State wildlife and land management and resource agencies for consultation in determining unique and high value wildlife habitats. The reader is referred to the preamble discussions of Sections 779.20 and 780.16 for further explanation of wildlife habitats.

Section 815.15(b). A few commenters requested that Section 815.15(b) (proposed Section 815.12(h)) should be deleted or amended because there was no statutory authority for requiring environmental data gathering during exploration activities. Other commenters alleged that such a requirement is "unrealistic." Some commenters contended that exploration personnel are not generally biologists, soil scientists, hydrologists, or meteorologists, and are frequently totally unqualified to make studies in the areas required by the proposed regulation. These commenters concluded that any such studies performed by the exploration personnel would lack validity. Other commenters contended that if it was the intention of the proposed regulation that the person conducting exploration send a team of biologists, geologists, soil specialists, etc. into each exploration area, such a requirement is either unnecessary or redundant. These commenters contended that if a decision is ultimately made not to obtain a mining permit, it would be unnecessary for the detailed studies to be performed, and if a decision is ultimately made to apply for a mining permit, such studies as are required by 30 CFR 778–761 will provide the information required by the proposed regulation anyway. Other commenters contended that the proposed regulation was objectionable in that it requires the gathering of extensive environmental base data prior to any commitment, however tentative, by the operating company. These commenters pointed out that exploration may predate actual mining by decades, and quite commonly exploration is made with no immediate mining objectives. For example, a drilling project designed to provide guidance for an acquisition program. In these instances, the commenters alleged, it is inappropriate, premature and costly to accumulate details on such items as overburden acidity, hydrologic conditions, etc. These commenters concluded that if a coal exploration operation is contemplated to develop a coal reserve, it is the obligation of the mining concern to provide the requisite base data. However, it should remain the privilege of the operator to decide at what stage to gather this data.

Some commenters argued that the environmental data required by the proposed regulation would be entirely irrelevant to a deep mine or deep mine permit. It is, thus, pointless to require surface mine environmental baseline data for a deep mine prospect. Other commenters contended that the environmental monitoring effort should be made after exploration has determined whether or not an area has a reserve base sufficient to support mining. Some commenters wanted the proposed section amended so that the measurement of environmental characteristics would be at the regulatory authority's expense. The Office declined to accept those comments. It seems that the commenters do not fully understand the intention of the proposed regulation.

The proposed regulation would have required that environmental data be collected during coal exploration activities so that the explorer would be able to determine and minimize the

environmental effects of the exploration activities, as well as to collect the data needed if a decision to apply for a permit to mine is reached. Part 815 is not an exemption from the requirement to minimize environmental damage for coal exploration activities which do not intend to apply for a mining permit or which do not result in a decision to apply for a mining permit.

In response to the comments discussed above, OSM has rewritten the proposed regulation to clarify this intent. As for the comments suggesting that the regulatory authority bear the expense of environmental data gathering, OSM declined to accept the suggestion because the data being gathered is not primarily for the benefit of the regulatory authority, but rather is for the use of the explorer in minimizing any environmental damage caused by the exploration activities and for use in support of a permit application if a decision to mine is reached by the operator. The Act does not contemplate government directly bearing costs of compliance by operators or explorers during the permanent program.

Some commenters contended that the phrase "to the maximum extent possible" in proposed version of Section 815.15(b) should be deleted because, if deleted, the operator will in fact comply to the maximum extent practical. For these commenters, the phrase "maximum extent practical" would amount to a "loophole" which the operator could use to argue that all "maximum practical" data has been gathered. The result, for these commenters, would be that the coal explorer will probably make little effort to gather and record data. The suggestion of deleting in its entirety the phrase "to the maximum extent practical" because it would amount to a "loophole" for coal exploration operators was rejected, because these commenters, like those discussed in the previous paragraph, are misreading the intention of the proposed regulation. As discussed previously, the primary purpose of the regulation is to minimize environmental damage occurring during the course of exploration activities and not to provide comprehensive environmental data for the regulatory authority or the public.

Other commenters contended that the requirement of proposed Section 815.12(h) (final rule 815.15(b)) to measure the "maximum extent possible" important environmental characteristics implies an unending and wasteful activity for the operator, because once important environmental characteristics of the exploration area are measured, additional measurement to the "maximum extent" does not significantly increase the ability to minimize environmental damage or to submit an application under 30 CFR 773–791. For these commenters, the proposed regulation already sufficiently outlines the measurements to be considered. OSM agreed with these later comments and deleted the word "maximum" from the final regulation.

Other commenters contended that final rule 815.15(b) (proposed Section 815.12(h)) amounts to an environmental impact statement for coal exploration activities. These commenters viewed such a requirement as unnecessary for exploration activities, and for providing adequate information for a mining permit application which may never be submitted. These commenters conceded, however, that the measurement of important environmental characteristics may be necessary to minimize environmental damage. These commenters suggested amending the proposed regulation so that the measurements required would be determined as a result of discussion and agreement between the person conducting coal exploration activities and the regulatory authority. OSM decided to delete the required list of environmental characteristics, which would have had to be measured under proposed Section 815.12(h). OSM did not believe it necessary, as several commenters suggested, to write the final regulation so as to require a determination of the environmental characteristics to be measured based on agreement between the person conducting the coal exploration and the regulatory authority. The philosophy of Part 815 is to set minimum and flexible performance standards, which the regulatory authority may add to it as it deems necessary or advisable under its climatic, geologic, or environmental conditions. Requiring consultation between explorer and regulatory authority would come close to requiring prior permitting of exploration, which is beyond the intent of Section 512 of the Act, at least for exploration under 250 tons.

A proposed section 815.12(i) would have required all monitoring data collected during exploration to be submitted to the regulatory authority. The U.S. Fish and Wildlife Service "strongly recommends" to OSM, without accompanying rationale, that this proposed section not be changed. Other commenters suggested that this obligation be limited to supplying data only when the person conducting exploration applies for a permit. The rationale offered was that the exploring entity was in a speculative position with respect to future intent to mine until a decision to seek a permit is made.

Another commenter, although not recommending an explicit limitation, suggested that much data obtained in coal exploration is strictly related to the economic value of the coal deposit and does not concern the potential environmental impact of mining those deposits. Other commenters indicated that exploration activities are concerned with evaluating coal quality and reserves and do not have as their primary goal the collection of all environmental monitoring data necessary for preparation of the permit application. Many exploration activities, according to these commenters, are terminated at the point when adequate information on the coal quantity and quality has been obtained without regard for doing further exploration work to obtain additional environmental monitoring data at that very preliminary stage of the investigation of the site. These commenters further alleged that due to the emphasis within exploration activities on the evaluation of the coal quantity and quality available, the other environmental monitoring data collected is not evaluated in enough detail to be used during proceedings to designate lands unsuitable for mining under proposed Parts 760–765, which is one use of the data OSM had suggested as a basis for the proposed requirement. For these commenters it would be premature, without a thorough evaluation of the area, to consider designating it unsuitable for mining based on the limited data collected during the exploration activities. These commenters insisted that specific additional studies covering all of the appropriate criteria for designating lands as unsuitable for mining, as explained in proposed Section 762.11, should be undertaken by the regulatory authority when it decides cases on lands unsuitable for mining. Such decisions, for these commenters, should not be made on the basis of environmental monitoring data which is often collected to a very limited degree as a minor part of an exploration program.

These comments convinced OSM that it was necessary to change the proposed regulation despite the strong recommendation of the U.S. Fish and Wildlife Service not to change it. OSM has, therefore, rewritten the requirement on environmental data contained in proposed Section 815.12(i) of the proposed regulations and incorporated it into Section 815.15(b) of the final regulations. Section 815.15(b) of the final regulations makes it clear that environmental data collected is used to provide supportive information for any permit application under Subchapter G, as well as to provide coal explorers with an indication of the environmental damage which they may be causing and must minimize, and is not necessarily for determinations by the regulatory authority of lands unsuitable for mining.

Some commenters requested that the data submission requirement of proposed Section 815.12(i) be amended to exempt environmental monitoring data collected during coal exploration from confidentiality protection. These commenters stated that it seemed to be an enormous waste of time, money and useful information to require environmental monitoring and then not require the resulting data be collected in some central place where persons wishing to analyze the data could have access to it. These commenters did not believe that trade secrets are involved and that the only reason for requiring confidentiality would be to shield from the public any information pointing to adverse environmental impacts. These commenters wanted the regulation to require the coal explorer to submit, to the regulatory authority, all environmental monitoring data instead of merely requiring the operator to make such data available. To only make data available would require the regulatory authority to take some initiative in order to acquire it. These commenters conceded that it may be "unfair" to require the coal explorer to pay the cost of providing environmental monitoring data and therefore suggested that the coal explorer be reimbursed by either the regulatory authority or by OSM for the cost of reproducing the data and possibly for the cost of gathering the data. These commenters asked if money collected from civil penalty fines could be placed in a fund to reimburse coal explorers for the costs of gathering and providing environmental monitoring data. The commenters also suggested that all environmental monitoring data be placed in a separate file system since they have found it difficult and costly to compile data which is filed according to individual permits. Other commenters recommended that proposed Section 815.12(i) be amended, under authority of Section 512(b) of the Act, to include appropriate confidentiality protection for data submitted to the regulatory authority. The Office agreed with these latter comments and deleted Section 815.12(i) of the proposed regulations because the issue of public availability of information is now covered in Section 776.17 of the final regulations. The reader is referred to the preamble of Section 776.17 for a discussion of the reasons for rules governing public availability of information. As for the comments suggesting that OSM use money collected from civil penalty fines to reimburse coal explorers for gathering and making available to the public environmental monitoring data, OSM's response is that it cannot legally do this since money collected from civil penalty fines goes to the general account of the U.S. Government and not to OSM. As for the suggestion that all environmental monitoring data be placed in a separate file, OSM does not believe that it should tell State regulatory authorities how to set up their filing systems.

Section 815.15(c). Several commenters stated that Section 815.15(c)(i) (proposed 815.12(c)) on standards for vehicular traffic is acceptable as proposed, because these standards reflect the practices of conscientious coal exploration operators. One commenter further indicated that in his company's experience these practices have avoided environmental harm to the natural land surfaces traversed in the course of coal exploration. Other commenters recommended that this provision of the proposed regulations be revised because it would severely limit exploration activities. As worded, no off-road prospecting could be done on rainy days. These commenters alleged that States with much precipitation throughout the year could not, because of the proposed regulation, allow exploration for four or five months out of the year. Moreover, according to these commenters, roads that are not graded or surfaced can be adequate for all weather travel. The purpose of proposed Section 815.12(c) was to protect the environment from significant damage due to vehicular traffic. As several commenters pointed out, the danger of surface damage from vehicular travel is increased during and after precipitation. The degree of increased damage varies depending on other factors such as terrain, slope, soil characteristics, rainfall, ground cover and vehicle weight. Commenters contended that numerous private, timber and utility service roads are neither surfaced nor graded but, as a result of a fortuitous combination of the factors mentioned above, can be traveled during periods of precipitation by light utility vehicles without damage to vegetation or the surface. These commenters requested that OSM recognize this variability and suggested that vehicular travel be restricted during and after precipitation only when such travel could result in excessive surface damage. Other commenters contended that the proposed regulation would in practice require gravelling of roads, and in times of precipitation would dramatically raise field expenses and necessitate a much greater pre-drilling time delay. Moreover, if the road has to be regraded because of rutting, all of the gravel would be lost and thereby contribute to the expense of the operation as well as result in more disturbance to the environment. These commenters also contended that it will be necessary to remove the gravel before reseeding and thereby add additional expenses to the operation. Other commenters contended that having to attain grade limitations will result in the coal explorer potentially having to deal with numerous landowners instead of few landowners because in the process of crisscrossing a mountain with switchbacks to attain grade, more property lines will have to be crossed. Other commenters contended that the grading of roads as required by the proposed regulation would result in the unnecessary disturbance of miles of land surface and would increase the time to place an exploration drill rig on site, thus creating a greater potential for erosion and environmental degradation far in excess of that created by present methods.

The above comments convinced OSM of the need to clarify and rewrite the proposed rule. The final regulation requires that travel shall be confined to graded and surfaced roads during any periods when excessive damage could result. If limited to only "when practicable," as some commenters suggested, there could be too much damage. The wording in the final regulations eliminates the specific prohibition of using roads when precipitation has occurred, but covers all situations when excessive damage to the environment could result. Based on this revision, it would be possible for a person to conduct coal exploration activities following a rainfall or snowfall provided the area was stable enough to allow vehicular traffic over it.

One commenter requested that the proposed regulation be amended to include the words "where applicable" after the phrase "travel shall be confined." Since this commenter did not give a reason for the requested amendment and OSM did not consider it relevant, the suggestion was rejected.

The wording in Section 815.15(c)(1) would not severely limit exploration activities and would not require the construction of haulroads, as concluded by one commenter, except in certain cases when excessive damage to the environment existed. These cases would be rare and as a result the operator could delay planned activities until conditions for exploration were more favorable.

Another commenter felt that "excessive" rutting should be added to Section 815.15(c)(1). This suggestion was rejected because OSM believes that the avoidance of any excessive damage should be regulated and not "rutting" alone, as might be incorrectly inferred if the word were inserted as proposed. Other commenters requested that the proposed regulation be limited to federally owned surface land. OSM rejected this request because Section 512(e) makes it clear that this Part does not apply on Federal lands. The reader is referred to the preamble discussion

for Part 740 for further elaboration of this issue.

Some commenters suggested that proposed Section 815.12(c) would effectively prevent a person from returning from the field for an indeterminate period if a sudden thundershower occurred while that person was off a graded and surfaced road. OSM did not believe it necessary to write an exemption in Section 815.15(c)(1) of the final regulations to cover persons on ungraded or unsurfaced roads who are caught in unexpected weather, since it would be unreasonable for the regulatory authority to charge such person with violation of Section 815.15(c)(1). OSM assumes that any excess damage caused by persons trying to escape from emergency weather conditions will be repaired by these persons.

One commenter requested that proposed Section 815.12(c) be amended to qualify the phrase "absolutely necessary," because it could be strictly interpreted to mean that no travel may be accomplished except on public or private graded and surfaced roads. In support of this contention, the commenter gave the example that the regulatory authority could argue that it is not absolutely necessary to drill test in a particular area if some, even though minimal, information had already been gleaned from prior drilling or other sources. This commenter suggested that the phrase "absolutely necessary" be qualified that travel necessary to accomplish the purposes of the exploration, which is to determine the geology of the area with a high degree of accuracy. OSM rejected this request because the intention of Section 815.15(c)(1) of the final regulations is not to allow the regulatory authority to determine whether there should be coal exploration. But rather if the requirements of Part 776 are met, then the coal exploration operation should confine itself to activities which, as stated in the regulation, are "absolutely necessary *to conduct the exploration* (emphasis added)." The phrase "to conduct the exploration" clearly qualifies the term "absolutely necessary" and does not permit the regulatory authority the discretion to disallow coal exploration or to determine the scope of exploration operations under the guise of Section 815.12(c) of the proposed rules or Section 815.15(c)(1) of the final rules. One result of the final regulation is to restrain coal explorers from undertaking activities not directly related to coal exploration operations. Section 815.15(c)(1) will help limit mining operations occuring under the guise of exploration.

Many comments were received on Sections 815.15(c)(2), (3) and (4), proposed as Section 815.12(d). Some commenters requested the provisions be deleted in their entirety. These commenters contend that they have no way of establishing when maintenance may be required and would have no right of entry upon private, Federal, State, and local roads without permission. Moreover, these commenters contend that since State, Federal and local roads are maintained under existing laws and taxes, there is no need for coal explorers to have to maintain the roads they use. Other commenters contend that since very often a landowner will request a road be left in consideration for the use of his surface land during coal exploration operations, the landowner should be allowed to decide where and how the road should be constructed and not OSM. For these commenters, private roads on private lands were not meant to be regulated by Congress. Other commenters requested that these provisions be limited to Federal lands since surface owner consent should cover the situation. For the reasons stated above, these rules do not apply on Federal lands. Other commenters wanted to amend proposed Section 815.12(d) because they questioned the definition of "road." For these commenters there are many instances when exploration activity can be conducted within a short distance of established county, State, or Federal highways. In these cases, coal exploration sites are commonly entered through a farmer's field and require no road-building activity at all. These commenters suggest that these access routes cannot properly be considered "roads" as the term was used in proposed Section 815.12 or defined in proposed Section 701.5. For these commenters, the requirements set forth with respect to roads and road building in Section 815.12 were such that if applied to access routes across a farmer's field, they would result in considerably more environmental harm and land damage than present practices and procdures of coal exploration operations. These commenters requested proposed Section 815.12(d) be amended to require that exploration be conducted so that a minimum area will be disturbed by access routes and when road building is required (that is, when heavy equipment must be employed to remove or relocate trees, shrubs or earth materials), resultant new roads would then have to meet the performance standards of proposed Section 815.12(d)(1), (d)(2), (d)(3), (d)(4), and (d)(5).

Several comments were received on proposed Section 815.12(d)(1), which would have regulated the location of roads, limiting them to the flattest and most stable slopes. These commenters requested amending the proposed regulation so that roads could be located utilizing the most direct route to the drill site to minimize the area disturbed by construction and the resultant erosion. According to commenters, proposed Section 815.12(d) placed too great an emphasis upon the slope of a drill site access road while ignoring the length and area of such a road. These commenters contend that in highly mountainous regions, locating an access road on the flattest slope may result in the construction of a longer access road, exposing a larger area to erosion and increasing construction and reclamation time with a corresponding increase in the time a road would be exposed to the effects of erosion and making costs associated with reclamation and construction prohibitive in extreme cases. To minimize the potential for erosion by reducing the area disturbed and the time such disturbed area is exposed to erosion, these commenters would, as indicated above, amend the proposed regulation so that the area to be disturbed is considered equally with the flatness and stability at the slope in the design of temporary drill site access roads.

Numerous comments were received on proposed Section 815.12(d)(2), relating to stream crossings for roads. Several commenters requested that the proposed regulation be deleted entirely. Some of these commenters argued that since streams are being forded by vehicles of all kinds on numerous occasions, to require every single crossing of an active stream to be approved first by the regulatory authority will cause unwarranted delay and expense where limited stream channel crossing is involved. Other commenters contended that the requirements of proposed Section 815.12.(d)(2) might be more disturbing to the natural land surface than the exploration operation because of the requirement to construct bridges, culverts or other structures. For these commenters, occasional fording of stream channels would be preferable to the disturbance associated with the construction of culverts or bridges. Other commenters contended that proposed Section 815.12(d)(2) would be especially troublesome if applied to environmental studies, where vehicle access to widely distributed sampling stations is essential in order to obtain sufficient data. Some commenters suggested amending proposed Section 815.12(d)(2) to exempt "occasional" stream crossings. For these commenters, "occasional" stream crossings in the course of exploration activities may be required and would not be the cause of significant degradation. Some of these commenters acknowledged that regular crossings would require greater attention by the regulatory authority but argued that some flexi-

bility must be allowed to the coal explorer. Other commenters suggested amending the proposed regulation so that vehicles would be required to keep crossings of active stream channels to a minimum. Some of these commenters would further amend the proposed regulation so that if a permit application is submitted, then specific crossing locations must be approved by the regulatory authority as temporary routes. These commenters contend that the impact on a stream from a vehicle crossing is extremely limited (even if it is assumed to have water in it at all times), since the time necessary for a crossing measured in seconds limits the disturbance that a crossing can cause. These commenters further contended that in operations involving less than 250 tons of coal, removing the stream crossings would typically be accomplished by small numbers of light four-wheel drive vehicles that do little or no damage. For these commenters, only in the event that more than 250 tons of coal would be removed or the area is developed for mining operations, necessitating larger numbers of heavy vehicles, would the stream crossings become numerous enough and produce enough disturbance to warrant examination and approval of regulatory authorities. Other commenters contended that their "drill site flagging and preparation procedures" will depend on the discretion and availability of an inspector regarding stream crossings. For these commenters, if inspection of sites is necessary, then the inspector will have to be available to "walk up to one hundred and fifty miles" to view the drilling sites and "an additional one hundred and fifty miles if he wants to get back." These commenters based their mileage projections on the "Southern Appalachian Exploration Proposed Drilling Program for 1979" (reference not provided). Other commenters requested that proposed Section 815.12(d)(2) be amended to require the regulatory authority to provide authorization for a stream crossing within 15 days after notification to the regulatory authority. These commenters contend that without a time constraint on the regulatory authority, the successful completion of an exploration program would be jeopardized and require the maximum use of personnel and equipment.

Several commenters contended that proposed Section 815.12(d)(3), requiring topsoil removal from roadways, should be deleted entirely. These commenters alleged that the removal and storage of topsoil for exploration access roads is unnecessary, extremely expensive, and far more damaging to the environment than vehicular travel. For these commenters, the short-lived nature of exploration roads and their minimal disturbance to the soil horizons makes topsoil storage unnecessary because methods of post drilling reclamation, back blading and seeding commonly used have "proved effective" in returning the disturbed land back to its original state. Moreover, these commenters contended that stockpiling of topsoil will create more problems in regards to increased sedimentation surrounding the storage area, and result in increased site preparation time, machinery, and personnel with the result that a larger area will be disturbed. Other commenters similarly contended that "most" exploration work is conducted as expeditiously as possible, so that to require that topsoil be removed, stockpiled and then replaced will not only significantly increase costs, but in many circumstances cause greater disturbance to the area than past exploration practices. For these commenters, in most cases it should be sufficient to only reseed and water bar as necessary.

Several commenters contended that removal and storage of topsoil before use of the surface area as an exploration road would be counterproductive in the Appalachian region. These commenters alleged that Appalachian soils are generally classified as "Ochrepts" and are shallow with a poorly developed "A" horizon. Due to the steep topography, removal of the surface soil would require the disturbance of 3 to 5 times that needed to build a road using the present techniques. This additional area would be needed to safely negotiate heavy equipment during the soil removal phase. The additional time required for these operations would also increase the needed service life of these roads well beyond the 1 to 2 weeks now needed to facilitate core drilling operations, and thereby expose the disturbed area for a longer time period before reclamation could be completed. These commenters further contended that the removal of topsoil would not protect fish, wildlife, and environmental values or site productivity because by removing soil moisture retention, run-off may result in increased particulates in area streams.

Moreover, these commenters asserted topsoil removal may reduce grazing grasses and greatly increase the impact and duration of what would normally be a short-lived operation. These commenters concluded that proposed Section 815.12(d)(2) could greatly increase the cost factors involved in exploration and may eliminate the ability of small operators to conduct coal exploration. Other commenters contended that topsoils on relatively steep slopes, such as those in eastern Kentucky, are usually shallow and stony and the underlying "B" horizon is generally clayish material, impermeable, and often pyritic which would constitute an obstruction to plant growth. These commenters contended that the "C" horizon, when properly limed, fertilized, and mixed with organic material, generally offers the best soil environment for plant growth. Therefore, these commenters conclude, a regional variation for mountainous areas should be added to the topsoil requirement for exploration roads.

Several comments were received on proposed Section 815.12(d)(4), which required sedimentation control for roads and required strict standards for roads intended to remain after exploration. Some commenters contended that the proposed regulation should be amended to allow the regulatory authority to have discretion to determine the nature of roads that are to be constructed which, if permanent, will be consistent with the post mining land use without simply assuming that permanent roads must be of the nature described in Part 816. These commenters asserted that they do a lot of exploration in mountainous areas where the existing land use is grazing. The only road existing outside of permit areas are essentially ranch trails that are used periodically by drive vehicles and stock. For these commenters, where the post mining land use will also be grazing, it would be valuable to ranchers to have additional ranch trails left of a similar nature to those roads that preexisted. To classify such roads as permanent would require that they be constructed in compliance with the requirements of Part 816 for permanent roads, with the result that a great deal more damage would be done to the land surface than if roads of the existing type were constructed and left for permanent use.

Other commenters requested deleting from the proposed regulation the phrase "best technology currently available" and substituting the phrase "established and generally accepted engineering technique." For these commenters, the phrase "best technology currently available" is vague in its requirements and in the powers vested in the regulatory authority because "best currently available technology" may be so new as to be unproven in all cases yet required by the regulatory authority. Moreover, "best technology currently available" may become available after a project has been initiated and thereby require re-engineering, delays, and reconstruction in addition to possibly a large amount of additional investment while providing only marginal increase in effective utility over a more common accepted method. In addition, these commenters contended that best technology in one area may adversely affect another

area and best technology may be subject to differences of opinion depending on the application and parameters examined. These commenters concluded by asserting that it is necessary to plan exploration operations in advance of execution, and a solid base for these plans can provide adequate protection to environmental factors by the use of "established and generally accepted engineering techniques."

Other commenters indicated that they were unclear as to the intent of the proposed regulation regarding permanent roads which are "modified." These commenters viewed the proposed regulation as implying that preexisting access routes, such as gas line service roads or old timbering routes, that are used by an exploration crew, would be subject to the stringent construction requirements of proposed Sections containing performance standards for roads in Part 816, if these roads were "modified." These commenters believed that the performance standards should carefully distinguish between "new roads" and "existing roads." "Permanent roads" should, for these commenters, be clarified by OSM to include only new roads constructed during or for exploration that will remain after exploration is completed and the definition, use, and modification of existing roads should be covered by a separate section of the regulations.

Several commenters requested that proposed Section 815.12(d)(5), relating to use of existing roadways, be deleted entirely and be replaced by new Sections 815.12(d)(5) and 815.12(d)(6). These commenters contended that proposed Section 815.12(d)(5) implied that "existing roads" are not to be treated or regulated by the same rules as "new roads." These commenters were uncertain as to what constitutes an "existing road," i.e., is it meant to include state, county, and township roads only (improved roads) or does it include private roads, old fire lanes, timbering roads, power or gas line service roads or the like? These commenters suggested a separate section to clarify the rules for use of existing roads from the rules for construction, maintenance and use of new roads. While it was clear to these commenters that restoration of new roads is expected, including but not restricted to revegetation and removal of and replacement of topsoil, these requirements may not be appropriate or desirable for existing roads used temporarily as access routes to drilling sites. For these commenters it is not uncommon, especially in the Appalachian coal fields, to use existing roads (such as gas line service roads or old timber trails) for access to drill sites. These commenters believe that their procedure is practical, inexpensive, and eliminates much road construction activity and to the extent that these roads are not materially altered by such use, it is environmentally sound to require no post-use restoration. These commenters requested that proposed Section 815.12(d)(5) be amended to require that existing roads may be used for exploration activity in compliance with applicable Federal, state, and local requirements. Moreover, these commenters requested that, if these roads are not substantially altered or modified for use and if these roads do not contribute to suspended soils in the streamflow or runoff outside the permit area, the coal explorer be required "only" to return these roads to their original, pre-exploration condition following exploration use.

Other commenters would add a new section to the regulations that would provide that if existing roads are significantly altered (including, but not limited to, change of grade, widening, or change of route, or if the use of existing roads contributes additions to suspended solids to streamflow or runoff outside the permit area) then existing roads should be subject to the provisions of proposed Section 815.12. Moreover, these commenters would provide in a new section that if significantly altered existing roads remain as permanent roads after exploration activities are completed, then these roads shall be designed, altered, and maintained in accordance with proposed Sections in Part 816 relating to permanent roads. For these commenters there are instances when access routes for multiple transits are needed, or when terrain and vegetation are such that some surface disruption is required to lay out a route. But in most cases, these temporary access routes will not be used for other than exploration efforts. These commenters do not believe that for such short term usage the same design and construction criteria for permanent access or haulroads could or should be used. Conversely, for these commenters, some exploration roads may ultimately be used for more permanent functions. The proposed amendments which these commenters submitted, they asserted, would make the necessary construction distinctions based on actual road use instead of ignoring the extremely varied types and uses of roads in surface mining as the proposed regulations do.

In reviewing the above comments dealing with proposed Section 815.12(d), OSM decided to reference the road criteria for exploration activities to new Sections 816.150-.176. These Sections consider road location, design and construction, drainage, surfacing, maintenance, and restoration based on the variables of volume, speed, and frequency of use. Class III roads, such as those used in coal exploration activities, were considered to be of short duration, subject to low speed and light weight use, and returned to productivity quickly. If conditions exist where less than 250 tons of coal is shipped out of the area for test processing, no approval is required and the coal may be hauled over the same roads used for coal exploration. Roads used for coal exploration may be used later for mining purposes and must meet the criteria compatible to its later use and class.

New Class III Roads constructed for coal exploration must meet the provisions of Sections 816.170–816.176. A new section 815.15(c)(3) was added to cover existing roads which are significantly altered or improved in road grade, width, alinement, drainage or surfacing and remaining as a permanent road after coal exploration activities are completed. According to this new section, the person conducting exploration shall ensure that these improved existing roads meet the provisions of 30 CFR 815.15(g) and CFR 816.150–816.166.

For existing roads that are not significantly altered or improved, that are used essentially as found, Section 815.15(c)(4) provides that existing roads are not to be treated or regulated by the same rules as new constructed Class III Roads. Although it may be desirable to ameliorate environmental problems caused by existing roads which are only used temporarily by coal explorers, OSM decided to require only that coal explorers repair any damage which they do to the roads while they are using them. Coal explorers are, therefore, required only to return existing roads to a condition equal to or better than their pre-exploration condition.

Section 815.15(c) of the final regulations responds to the comments submitted and strikes a balance as required by the Act between the nation's need for continued coal exploration and the protection of the environment from coal exploration activities. Keeping with the philosophy behind Part 815 of setting minimum rules in broad terms of general applicability, Section 814.15(c) of the final regulations maintains the discretion of regulatory authorities to set more stringent requirements than they believe are necessary in their particular jurisdictions.

With respect to general topsoiling requirements contained in paragraph (e) of section 815.15, several commenters recommended that proposed Section 815.12(e)(1) be deleted because the regulation inferred that there is a mandatory requirement for the removal of "A" horizon for all disturbances regardless of the extent of the disturbance or whether or not the removal may create a larger disturbance. OSM

decided not to delete the requirement of proposed section 815.12(e)(1), but to modify it, because special consideration for topsoil is required in section 515(b) of the Act which is referenced in section 512(a) of the Act governing coal exploration. Topsoil removal for roads is covered in the regulations (Sections 816.150–816.176) which have been discussed earlier in this preamble as applicable for exploration by reference in Section 815.15(e). The other coal exploration activities that involve disruption of topsoil are covered in Section (e) of the final regulations.

All of the issues raised by the comments on exploration roads were considered in the development of the final regulatory scheme. Detailed discussions of the issues raised may be found in the portions of this preamble which discuss Sections 816.150–816.176 (roads used in mining), 816.21–816.25 (topsoil requirements), 701.11(e) (existing, non-conforming structures), Part 776 (documentary requirements for exploration) and § 701.5 (definition of "best technology currently available"). Particular attention should be paid to the rationale underlying Section 816.170–816.176, which OSM believes will be the requirements applicable to the majority of roads constructed for exploration.

Section 815(c)(4) requires pre-existing roads to be restored either to their premining condition or to the standards for permanent roads under Section 816.150–816.166. OSM felt that any stricter restoration requirement would be so burdensome, given the speculative results likely from exploration, that the discovery of new mineable reserves would be severely limited. Accordingly, the explorer will be required by OSM to do no more, by way of restoration, than repairing any damage the exploration activities may have caused to the road.

Section 815.15(d). Section 815.15(d) requires restoration to approximate original contour of areas disturbed during exploration. This paragraph makes Section 515(b) (2) of the Act apply to exploration, as contemplated by Section 512(a)(2) of the Act. For new roads, restoration to contour is also guided by Sections 816.150–816.176, referenced under 815.15(c).

Section 815.15(e). Section 815.15(e) requires that all topsoil be removed, stored, and redistributed on disturbed areas as necessary to assure successful revegetation or as required by the regulatory authority. One commenter alleged that the removal of the "A" horizon in areas of permafrost could have catastrophic results. This commenter contended that in permafrost areas, it would be better to lay insulating layers of gravel over the overburden to form a road or to restrict use to winter. OSM agrees but has not changed the final regulations because the "State window" contained in Section 731.13 and the requirement in Part 736 to consider regional differences will allow each State and Federal program to adequately reflect special needs resulting from unique climatological or geological factors.

Other commenters stated that proposed Section 815.12(e)(1) contradicted proposed Section 815.12(d)(3), which would have restricted the disturbance or removal of topsoil in roadbuilding to only those instances where surface use as a road would have adverse environmental impact. these commenters requested that the provision be amended to require that topsoil be saved only when the regulatory authority requires it. OSM has accepted the thrust of these comments and has implemented them in Section 815.15(e) of the final regulations.

Section 815.15(f). Section 815.15(f) contains the revegetation requirements for exploration. The requirements are very general, although a plan must be approved for removal of over 250 tons, since these explorations are likely to denude larger areas of vegetation.

Several commenters felt that the proposed regulations (Section 815.12(m)) which required compliance with Sections 816.111–816.117, to be too restrictive. They contended that the wording should be changed so as to give the operator the opportunity to use contract specialists in revegetation. Other commenters contended that the revegetation rules need more flexibility. On occasion core samples would be taken from a farmer's fields at a time when those same fields would be plowed-under shortly after the exploration was completed. They felt there was scant logic in requiring revegetation efforts under such circumstances. These same commenters contended that there would be instances when a land owner would prefer not to revegetate an area which has been filled and regraded. They recommended that proposed Section 815.12(m) be modified so that revegetation could be waived at the request of the surface owner if approved by the regulatory authority.

As a result of these comments, the proposed regulation was changed. This provision now allows revegetation to be performed by the person or agent who conducts the coal exploration operation. To give more flexibility in the revegetation requirements, Section 815.15(f) allows the operator or agent to plant crops normally grown in an area if both the preexploration and postexploration land-use is intensive agriculture. However, the commenters' requests for revegetation to be waived by the surface owner if approved by the regulatory authority was rejected because the waiving of revegetation by the surface owner would undermine the environmental protection standard mandated by Section 512(a) of the Act. The purpose of the requirement for revegetation is to protect environmental values, such as air, water, and wildlife. OSM cannot allow private parties to undo, by contract, what Congress has required by statute.

Section 815.15(g). Section 815.15(g) contains requirements for stream diversions and diversions of overland flow. This regulation is necessary to protect the hydrologic balance.

One commenter recommended that the word "ephemeral" be deleted from the proposed version of this provision because there was no scientific or layman's definition of "ephemeral stream." This recommendation was rejected. Ephemeral streams are defined in Section 701.5 of these regulations and the reader is referred to the preamble discussion for that Section. Ephemeral streams are regulated to minimize long-term adverse effects on hydrologic characteristics of areas where exploration may occur. The reader is referred to the preamble discussion of Parts 816 and 817 for further discussion of ephemeral streams.

Section 815.15(h). Section 815.15(h) establishes minimum requirements for the management of holes as required by Section 512(a)(2) of the Act. Several commenters contended that the requirement in proposed Section 815.12(g) to cap each hole with 10 feet of cement was unnecessary and needed more flexibility. These commenters felt this requirement would be unenforceable because an inspection of the seals would not easily determine how deep the seal was. Also, in different geographic regions cement caps may not be adequate or practical due to freezing and thawing.

Other commenters asserted that the proposed regulation ignores the possibility that a drill hole or other excavation may be usable to the surface owner as a water well or for the groundwater monitoring required if the operator decides to apply for a mining and reclamation permit.

Other commenters contended that the ongoing management and ultimate proper closing or sealing of holes is adequately addressed under the permanent environmental peformance standards Sections 816.13, 816.14, and 816.15. Still other commenters asserted that just capping the top 10 feet of a hole may not prevent the mixing of ground waters if there is more than one aquifer in the stratum that have been drilled. These commenters wanted the regulation amended to delete the 10-foot requirement and give the regulatory authority the discretion to manage the sealing of the hole to prevent pollution. One com-

menter asserted that the regulation be changed from ten to five feet of cement capping because exploration activities conducted under the guidance of the U.S. Geological Survey (reference not provided by commenter) have demonstrated that plugging of drill holes with five feet of cement is entirely sufficient.

Several commenters contended that the proposed version of this paragraph required approval of a plan for every type of exploratory operation and that Part 776 requires only the filing of a written notice of intention where less than 250 tons are involved and does not include approval of a plan. Other commenters requested the following amendments to the proposed regulations:

1. In areas where surface mining is to be practiced, boreholes should be plugged by placing an artificial bridge or packer six to eight feet below ground level, backfilling with drill cuttings to within two feet of the surface and sealing by implacement of a metal cap overlain by one foot of cement and one foot of topsoil;

2. In areas where underground mining is to be practiced, boreholes should be cemented from bottom to top.

The commenters who made the above suggestions did not offer reasons, but these amendments seem to reflect current acceptable practice in some coal exploration operations. Other commenters wanted the language amended to cover the mixing of ground waters from aquifers of different quality, because the plugging of drilled excavations as required only considers management methods to prevent the mixing of ground and surface water.

These comments convinced OSM of the need for greater flexibility in the regulation. OSM therefore modified the regulation by eliminating the 10-foot cement cap requirement and making capping more flexible by referencing, in Section 815.15(h), Sections 816.13, 816.14, and 816.15. The reader is referred to the preamble discussion of these sections and Sections 817.13, 817.14, and 817.15, for the rationale and bases of these requirements.

Section 815.15(i). Section 815.15(i) contains requirements for site clean-up after exploration. Several commenters contended that if the regulatory authority required, under Section 815.12(l) of the proposed regulations, that equipment or facilities should remain on the site following the completion of exploration, then the regulatory authority should be required to reimburse the operator for the cost of the facilities, assume the cost of operation and maintenance, and assume all liability for these facilities and/or equipment which remain on the site. These suggestions were rejected because they were based on a misinterpretation of proposed Section 815.12(l). Section 815.12(l) was proposed so that no equipment and/or facilities remain on the exploration site unless the exploration operator requested the regulatory authority that they remain on the site. The regulatory authority would allow this equipment and/or facilities to remain on the site for certain purposes. Section 815.15(i) allows equipment and facilities to remain on site only after a determination by the regulatory authority following a request by the explorer.

Section 815.15(j). General hydrologic balance protection is required under Section 815.15(j).

Several commenters contended that the construction of treatment facilities which might have been required by proposed Section 815.12(k), would cause a greater disturbance than the exploration itself. These commenters contended that the operators should be afforded the oportunity to use small devices (straw bales, pole dams, etc.) which would meet the effluent limitations of Section 816.42(a). Other commenters requested that proposed Section 816.42(k) should be amended to exempt normally small amounts of drilling fluid, because under normal drilling conditions the amount of drilling fluid used is not great and is generally confined to the immediate vicinity of the drill site. One commenter requested that the requirement of a treatment facility should be clarified to recognize the existing technologies and practices of "mud fills, decantation and fill." Another commenter contended that it is not clear whether or not discharge limitations would apply to pump testing of wells. Other commenters stated that the proposed regulation was not clear. One comenter contended that the requirement that water used in coal exploration activities may need to be treated is excessive. This commenter suggested that only ambient levels be met.

Based on the above comments, proposed Section 815.12(k) was modified by incorporating into Section 815.15(j) of the final regulations provisions to allow for different sediment control measures than those referenced in Section 816.45 or sedimentation ponds which comply with Section 816.46. Moreover, OSM decided to leave to the discretion of the regulatory authority the decision of whether to specify additional measures which it believes need to be adopted in particular coal exploration activities. OSM did not believe it necessary to accept the comments requesting exemption of drilling fluids from passing through treatment facilities, because drilling fluids are usually in such small amounts it is doubtful that they would be discharged from the exploration operation which is covered by the regulation. In most cases, the small amount of drilling fluid discharged would seep into the ground and cause no problems. Otherwise, drilling fluids should be treated. In all cases, care must be taken to minimize the amount of drilling fluid released and to reduce its adverse environmental effects.

One commenter alleged that proposed Section 815.12(k) interferes with the regulatory authority of the Environmental Protection Agency. OSM does not agree with this comment and the reader is referred to the discussion in this preamble of Section 816.42, on the interrelationship of OSM effluent standards with those of the Environmental Protection Agency under the Clean Water Act, for further information with respect to this allegation. One commenter suggested that the operator should not be held in violation for water quality deterioration in receiving streams, if the water discharged from coal exploration activities meets the effluent limitations of Section 816.42(a). OSM believes that if the regulatory authority feels additional measures are needed to prevent further deterioration of the water quality in receiving streams, it has the discretion, under Part 815, to so require. This provides the regulatory authority with sufficient authority to protect receiving streams without unnecessary hardship to those engaged in coal exploration.

Section 815.15(k). Section 815.15(k) covers the general requirements for handling and/or disposal of acid- or toxic-forming materials. It also allows the regulatory authority to require additional measures to be adopted, if necessary. This provision has been added in order to fulfill requirements for protection of the hydrologic balance and for assuring successful revegetation. While these goals were met in the proposed regulations, which did not include this explicit provision, changes in the organization since the proposed regulations, and the general shift from specific to general requirements, require this matter be covered in this separate paragraph.

Section 815.17. There were no comments on proposed Section 815.13, Section 815.17 in the final regulations. The statutory authority, basis, and purpose of this section was explained under Section 815.13 of 43 FEDERAL REGISTER, pp. 41736 (September 18, 1978).

PART 816—PERMANENT PROGRAM PERFORMANCE STANDARDS—SURFACE MINING ACTIVITIES

Section 816.1 and 816.2 set forth the scope and objectives, respectively, of

this Part. Part 816 contains the minimum performance standards and design criteria which will be applicable under a State or Federal program for surface mining activities. Surface mining includes methods commonly known as contour mining, area mining, auger mining, mountaintop removal, box cut, open pit, and removal of coal from waste piles.

§ 816.1 Scope.

1. Commenters requested that existing nonconforming structures (now simply referred to as existing structures) be exempted from the performance standards of Part 816. The reader is referred to the preamble discussion of Sections 701.11(e), 780.12 and 786.21 for a full explanation of how this Part applies to existing structures.

2. Other commenters requested that Parts 816 and 817 be combined into a single Part. This request was not accepted. The Act, Section 516(d), recognizes the difference between surface and underground mining and mandates the "modification of requirements, permit approval and bond requirements as are necessary to accommodate the differences between surface and underground coal mining." This has been done, and the requirements are sufficiently different that separate Parts are the clearest way to present the requirements. Also, OSM wants a separate set of rules for each category of mining, which will be self-contained and complete so that the operator need not read or retain copies of requirements not applicable to the particular operation.

3. A comment that all coal exploration or exploration holes be excluded from Part 816 was rejected. Exploration holes to be drilled within a permit area must meet the requirements of Section 515(b)(10)(A)(iii) of the Act. This activity falls within the definition of mining operations under Section 701(28) of the Act, as opposed to exploration, which is an activity not subject to permit requirements. Holes outside the permit area are governed by Part 815.

§ 816.2 Objectives.

These objectives derive from Sections 102 and 515 of the Act. A commenter requested striking the word "enhance" from this Section since it was not in the Act. The Act states in Section 515(b)(24) "to the extent possible using the best technology currently available minimize disturbances and adverse impacts of the operation on fish, wildlife and related environmental values, and achieve enhancement of such resources where practicable." Based on this wording in the Act, "enhance" was not removed from Section 816.2, since improvement of conditions is a goal Congress clearly intended be achieved, where possible.

§ 816.11 Signs and markers.

This Section specifies requirements for identification and warning signs and for markers of permit perimeter, buffer zones, and topsoil storage piles. The regulations seek to balance the desire to reduce cost and bother to the permittee against the need for ample identification in the interest of citizen participation, inspection by the regulatory authority, employee guidance, and protection of the public. Proper markings of perimeters and working areas will be particularly valuable in preventing equipment operators from inadvertently entering areas not authorized for disturbance and should help eliminate arguments over location of perimeters. Properly posted signs and markers reduce hazards to the health and safety of the general public and mine personnel and prevent adverse effects on the environment.

The statutory authority and purpose for this Section are found in Sections 102, 201, 501, 503, 504, 515, 517(d) and 701(17) of the Act.

Literature on which the requirements are based include the following:

1. 30 CFR 77.1202.

2. Colorado State Land Reclamation Board, Rules and Regulations promulgated under the Open Mining Reclamation Act of 1973.

3. Maryland Department of Natural Resources, Geological Survey-Bureau of Mines, Bituminous Coal Strip Mine and Auger Mine Regulations of 1973, 08.06.01(.03).

4. Montana Department of State Lands, Rules and Regulations promulgated under the Montana Strip and Underground Mine Act of 1978, 26-2.10(10).

5. Ohio Department of Natural Resources, Division of Reclamation, Rules Nos. 1501:13-9-01, 1501:13-9-05, May 15, 1978, as revised and effective August 28, 1978.

6. Ohio Rev. Code Ann. 1518.16 (1975).

7. Tennessee State Department of Conservation, Division of Surface Mining, Rules and Regulations, Chapter 0400-3-0. 205, 1975.

8. West Virginia Department of Natural Resources, Surface Mining Reclamation Regulations, Chapter 20-6, Series VII, 1973.

9. Wyoming State Department of Environmental Quality, Land Quality Division, Land quality rules and regulations, 1975 (as amended).

816.11(a). This Section provides the specifications for signs and markers.

816.11(a)(1). Responsibility for installation and maintenance of signs and markers is placed on the operator. Regular inspection of signs by operators will be necessary to assure compliance.

816.11(a)(2). Uniformity of signs is required. A commenter suggested the language be changed by deleting the requirement that signs and markers be of uniform design. The Act doesn't specifically state that signs and markers be of uniform design. However, if the markers are of a uniform design, the probability of the markers being recognized for the specific purpose for which they are required, by both workers and the public, is greatly increased. Accordingly, uniformity is required.

816.11(a)(3). Signs and markers should be made of durable material so that they will not deteriorate before the final bond is released on the permit area. It would be to the permittee's advantage that signs amd markers be constructed of durable material so that frequently reposting of them is unnecessary. Since the final bond on a permit area would not be released for 5 or 10 years (depending on the geographic location) following the last augmented seeding, it would be essential that durable signs and markers be posted so the regulatory authority could determine the perimeter of the permit area and the person responsible.

816.11(a)(4). The provision of Section 816.11(a)(4) was adopted by OSM to assure that signs and markers used during surface mining activities comply with local ordinances and codes, and to clarify that these regulations are not intended to exempt operators from other applicable laws.

816.11(b). Maintenance of signs and markers will be the responsibility of the permittee until the final bond is released on the permit area. OSM adopted this provision because it will be necessary for the regulatory authority to know who is responsible for the permit area, the boundary of the permit area, and the location of buffer areas, blasting areas, and topsoil stockpiles, in order to make thorough inspections. Without continued maintenance of these signs and markers, inspection of the permit area would be difficult.

816.11(c)(1). The authority for this Section is found under Section 517(d) of the Act. The placement of identification signs at points of access to the permit area from public roads will identify to the regulatory authority and public the location of surface mining activities.

816.11(c)(2). The authority for this Section is found under Section 517(d) of the Act. Several commenters felt that Section 816.11(c)(2) should only require that a current surface mining permit be specified. As proposed on September 18, 1978, all permits had to be identified. The commenter's sugges-

tion was accepted and in Section 816.11(c)(2) the word "each" was deleted to conform this Section to require no more than is required under Section 517(d) of the Act.

816.11(c)(3). Identification signs are required to be posted and maintained until the final bond is released on the permit area. This provision will notify the regulatory authority and the public of the identity of the person or company responsible for mining and reclamation activities in that area.

816.11(d). A commenter felt that Section 816.11(d) should be revised to require that all mine areas be fenced as well as posted. The cost of construction and removal of a fence around the permit area, many of which exceed 100 acres, could be prohibitive. As a result, this suggestion was not adopted. Underground openings must have, under Sections 816.13, 816.14 and 816.15, protective measures to prevent access.

Many commenters felt that perimeter markers should not have to be posted before submitting a permit application, as would have been required under the proposed version of this Section. The commenters stated that if the permit is refused, then these markings would have to be removed, which would involve added cost. Many surface owners probably would object to needless perimeter markers being installed on their property, and some leases will not allow such signs until mining is about to begin on that particular tract. On the basis of these comments, Section 817.11(d) was changed to require marking only before the beginning of surface mining.

816.11(e). Buffer zones are to be identified and marked to assure that unnecessary disruption and degradation of stream channels will not occur. Buffer zone markers are deemed necessary to provide notice to equipment operators that special effort is required when mining in the vicinity of streams. It should be noted, however, that the requirement for buffer zone markers does not preclude mining through streams where specifically approved by the regulatory authority under the controlled conditions established in Section 816.57(a).

816.11(f). The use of blasting signs, markers, and signals will provide notification to any person entering the permit area of the potential hazard relating to the use of explosives and flyrock. A suggestion was made to revise Section 816.11(f) so that it is clearer and more readily enforceable with respect to procedures for marking blasting areas, and to eliminate any potential for conflict with MSHA regulations. The proposed regulations created a minor enforcement conflict with MSHA, because 30 CFR 77.1313h requires everyone to be removed from a blasting area before a shot is fired unless shelters are provided. If the whole mine was labeled a blasting area by OSM, a strict interpretation of the MSHA rule would require everyone on the minesite to leave or take shelter. On the basis of this recommendation, Section 816.11(f) was amended to eliminate potential conflict between regulations of two Federal agencies. Originally, the proposed regulations stated that signs reading "Blasting Area" should be displayed at the edge of blasting areas along roads within the permit area. This provision appeared to be ambiguous, so OSM accepted the suggestion that "Blasting Area" signs be displayed along the edge of blasting areas which come within 50 feet of roads within the permit area or within 100 feet of any public road right-of-way, in accordance with Section 761.11(d) of these regulations. The 50-foot distance was chosen for mine roads, since employees will be using those roads instead of the public. All employees on the operation should be informed when the blast is to occur. As a result, a lesser distance is more appropriate for posting the "Blasting Area" signs. These specific distances were adopted to further clarify the situation in which "Blasting Area" signs should be displayed. The implementation of these distances will make the inspection and enforcement process simpler. Section 816.11(f)(2) was implemented to be in conformance with the provisions of Section 816.65(e). The reader is directed to the preamble on Section 816.65(e) for further discussion. Because of the minor conflict with MSHA regulations, instead of placing a sign reading "Blasting Area" at all entrances to the permit area from public roads, a sign reading "Warning! Explosives in Use" will be required, as stated in Section 816.11(f)(3).

816.11(g). Adequate marking of topsoil storage areas is required around all areas utilized to stockpile topsoil or other designated subsoils pursuant to Section 816.23. A few commenters felt that requirements for topsoil markers should be deleted in their entirety. Section 515(b)(5) of the Act specifies the removal of topsoil from the land in a separate layer and requires attention to topsoil handling, storage, and preservation. Such attention suggests clear identification of topsoil storage areas. Topsoil identification will assist operators in complying with the regulations and will aid citizens and regulators in enforcing them. Based on this rationale, Section 816.11(g) was not changed.

§ 816.13–816.15 Casing and sealing of drilled holes.

Except for the differences noted below, Sections 816.13–816.15 are substantially identical to the underground mining performance standards in Sections 817.13–817.15. The reader is referred to the portions of the preamble for Part 817 which discuss Sections 817.13–817.15, for information concerning the technical basis, alternatives considered, statutory authority and disposition of comments for these Sections. In addition to the Sections of the Act cited in those portions of the preamble, these Sections are based on Section 515 of the Act. While the Office considers the effects of improperly protected holes and entryways to be sufficiently similar in surface and underground mining to warrant substantially identical performance standards, the distinct differences between surface and underground mining operations do require that certain parts of these Sections reflect these distinct differences. This is illustrated by the references in Section 817.15 to shafts, drifts, adits, and entryways—references not specifically stated in Section 816.15. Additional differences are shown in Sections 816.14 and 816.15, which deal respectively with the temporary sealing of drilled holes and other underground openings and the permanent sealing of drilled holes and other underground openings.

§ 816.21–816.25 Topsoil.

Authority for these regulations is contained in Sections 102, 201, 501, 503, 504, 507, 508, and 515 of the Act.

The technical literature used in preparing Sections 816.21–816.25 includes the following:

1. Aldon, F., 1978. Reclamation of Coal-mined Land in the Southwest, Jour. of Soil and Water Const., Vol. 33, No. 2, pp. 75–79.

2. Baker, James B. and Broodfoot, W. M. 1977. Site Evaluation For Light Important Southern Hardwoods, U.S.D.A., Forest Service General Technical Report 80–14.

3. Carman, W. H., 1975. Forest Site Quality Evaluation in the United States, Advances in Agronomy, Vol. 27 Academic Press, Inc., pp. 225–226.

4. Colorado, Rules and Regulations of the Land Reclamation Board, 1976 pp. 1–25.

5. Lull, H. W., 1959. U.S.D.A., Forest Service, Misc. Pub. No. 768.

6. McCormack, E., 1976. Soil Reconstruction: Selecting Materials For Placement In Mine Reclamation, Mining Congress Journal.

7. McCormack, E. 1974. Research and Applied Technology Symposium, 2d, Oct. 22–24, Louisville, Ky., pp. 150–162.

8. Montana, Rules and Regulations adopted pursuant to Title 50, Chapter 10, R.C.M. 1947. (1978)

9. Plass, W. T., 1978. Reclamation of Coal-mined Land in Appalachia, Jour. of Soil and Water Cons., Vol. 33, No.2, pp. 56–61.

10. Power and others, 1978. Reclamation of Coal-mined Land in the Northern Great

Plains, Jour. of Soil and Water Cons., Vol. 33, No. 2, pp. 69–74.

11. U.S. Department of Agriculture, Soil Conservation Service, 1975 Soil Taxonomy, Agriculture Handbook No. 436, and U.S. Department of Agriculture, Soil Conservation Service, Agriculture Handbook No. 18.

These sections contain regulations for achieving the requirements of Sections 515(b) (5) and (6) of the Act, as well as certain of the provisions relating to revegetation, protection of the hydrologic balance, minimization of air pollution, and prompt reclamation. These sections require that persons conducting surface mining activities remove topsoil or other approved plant-growth material before beginning mining operations, save it for later use in a manner conducive to protecting the primary root medium from contamination and erosion, and redistribute it in a manner which will enhance its productivity. Systematic handling and storage practices can protect physical and chemical characterisitics of the soil that are necessary to maintain vegetation while it is in storage and after it has been redistributed onto the regraded area. These regulations are intended to minimize water pollution and provide a medium for plant growth capable of returning mined land to a condition and/or use equal to or higher than that before mining.

§ 816.21 Topsoil: General requirements.

Numerous commenters voiced concern that Section 816.21(a) could prevent mixing of the B and C horizons or other supplemental materials, and that selected overburden materials should not be removed before surface disturbance. According to these commenters, the requirement "as a separate operation" could also restrict movement of topsoil materials during regular mining operations and increase compaction. The phrase "as a separate operation" is not intended to require an operation separate and apart from the regular ongoing mining program, but the topsoil to be saved must be removed as a separate layer and as a logical step in the mining process. Thus, when practical, the material should be moved only once from its original location to the place where it should rest permanently as a part of the new soil. Nor was the intent to prevent the mixing of the soil strata if the resulting soil has been determined to be equal to or more suitable for vegetation as provided in Section 816.21(e). This Section has been revised to better assure that its intent is clear.

A commenter suggested that there was not an obvious, impelling reason for emphasizing that A horizon materials should constitute the definition of topsoiling material. The Office agrees that topsoil is a general term that is used in at least four ways (Agriculture Handbook, No. 18, p. 185). In an effort to avoid confusion, the Office has elected to define topsoil in accordance with one of those common usages and to use the term "topsoil or substitute materials" when making reference to specific topdressing material. Further, the Office recognizes that some sites may not contain topsoil as defined in these regulations and, when that is the case, paragraph 816.22(e) is applicable.

A commenter suggested that OSM require several feet of subsoil to be saved and used to separate the topsoil from the spoil in all reclamation. This commenter felt that only in this way could the operator be sure that the subsoil is nontoxic. The Office decided that healthy subsoil will be assured under the requirements of Sections 816.22, 816.48, and 816.103 which assure, respectively, that enough topsoil or a combination of topsoil and a substitute or supplemental material is preserved to ensure productivity (including, in some cases, horizons below the A horizon), that toxic materials are promptly identified and properly disposed of, and that at least 4 feet of nontoxic cover is placed over toxic material remaining after mining.

Commenters recommended that a clause be added to this Section exempting premining activities from the separation of vegetation from the topsoil removed, as well as stockpiling of the surface material removed. The Office has determined that a statement in Section 816.21 or 816.22 that would exempt activities that "normally precede mining operations" from topsoil removal is not warranted since applicable exemptions are set forth in the regulations for the activity involved (see for example, Sections 816.152(d), 816.162(d), and 816.172(d), which cover topsoil handling associated with road construction).

Several commenters suggested deleting the reference to Section 816.23 from Section 816.21(b) because Section 816.23 requires stockpiling only when it is impractical to redistribute topsoil immediately. The Office believes that reference to Section 816.23 is needed to further identify the topsoil storage and stockpile requirements. Therefore, the commenters' suggestion has been rejected.

Several commenters were concerned that it may not be desirable or environmentally sound to respread topsoil material "immediately" following the final grading. They contended that topsoil material should not be respread until the graded area has had time to settle; thus, the word "immediately" should be removed from Paragraph (b) of this Section. The Office has rejected these comments because the regulatory authority can rely on the term "when it is impractical to promptly redistribute" of Section 816.23(a) and require stockpiling if it appears that immediate respreading would be impractical because of potential settling problems.

§ 816.22 Topsoil: Removal.

The requirements of Section 816.22 are essential for reconstructing a plant growth medium (soil) that will create the most favorable qualities for plant growth. Soil profiles vary widely in thickness, from mere films to those many feet thick. Some of the thicker deep layers may need to be examined because of their importance to drainage and other factors (Agricultural Handbook No. 18, p. 147). Also, plant roots require soil horizons that are able to supply adequate water, air, and nutrients (Agricultural Handbook No. 18, p. 249). Thus, the friable nature of the A horizons makes them the most favorable material for seedbeds among existing materials at most sites.

McCormack (1976) stated: "In most areas, the A horizon of natural soil is vastly superior to any underlying soil horizon or geologic strata. Even if it is only 3 or 4 inches thick, careful handling and return of this horizon to the surface is required for most successful reclamation. The soil survey indicates the thickness of the A horizon and properties that are important to reclamation, including texture, structure, organic matter content, and pH." To mix the various soil horizon, during removal could be counterproductive to restoration of the disturbed area to a level at least equal to the premining capability.

The regulatory authority might require removal and separation of the B horizon or portions of the C horizon or other substrata if necessary to obtain soil productivity. Plass (1978, p. 57) states that proper topsoiling may involve the removal and storage of the A, B, and C horizons. McCormack (1976, p. 19) states that: "Instances where the geological strata is better suited for the productive growth of plants, although uncommon, do exist in a few areas and should be recognized before final plans for excavating and regrading are made." Similarly, the Montana rules and regulations (sections 26-2.10(10)S10280(8)(e) and 26-1.10(10)S10340(6)) provide for the use of plant-growth materials, other than topsoil, when those materials are determined superior in production potential to the topsoil of a disturbed area.

Agricultural Handbook No. 18 states that "Some plant roots penetrate to much greater depths than commonly believed." Also, McCormack (1976) wrote that "Most A horizons are less than 10 inches thick—too thin for a fa-

vorable root zone for most plants. Other favorable material must be placed below the A horizon in order to create a favorable root zone several feet in thickness." In most areas the B horizon is more satisfactory in the root zone than is material from geologic strata, but McCormack says these materials need evaluation and the one most suited to restoring production should be chosen. The lower horizons ordinarily possess qualities that are less favorable for plant growth. Thus, to mix these materials will ordinarily lessen the productive potential. However, mixing or the use of substitute material is authorized under Section 816.22 when these practices can be advantageous to establishing permanent vegetation and restoring disturbed area to the premining production potential.

The mixing of topsoil and selected overburden is an acceptable practice when the mixture produces a soil medium more suitable for land-use capability and productivity than topsoil. Alternative strata may be used as a growth medium when topsoil is either of inadequate quality or quantity. Colorado and Montana, in their regulations, recognize the importance, under certain conditions, of providing for the use of overburden other than topsoil. While McCormack (1976) states that vertical sections above coal formations generally are widely varied in their suitability for covering a disturbed area, he goes on to state: "Instances where the geological strata are better suited for the productive growth of plants, although uncommon, do exist in a few areas and plans for excavating and regrading are made."

All determinations of suitability of various horizons and their appropriate handling ought to be based on previously performed analyses and adequate field trails.

Paragraph (a): Timing. Several commenters indicated that the language in this paragraph implies that the vegetative cover should be cleared from the entire area before removing the topsoil. Thus, it was suggested that "all areas" be replaced with "immediate areas." Also, they contended that the term "vegetative cover" is too broad and could be interpreted as requiring the removal of all organic material. The Office agrees with these comments because removing the vegetative cover from more than the immediate area to be affected would be impractical and could be environmentally damaging. In reviewing this paragraph, the Office believes that deleting the word "all" will make it clear that operators are not required to remove vegetation from the entire permit area before beginning the topsoil removal operation. However, the Office believes that the language of this paragraph clearly states that only the vegetative cover that could interfere with the use of the topsoil need be cleared. Therefore, this part of the commenters' suggestion has not been accepted.

Commenters requested clarifications concerning the requirement for the removal of topsoil for roads, sedimentation structures, or other related activities that normally precede mining operations. Topsoil-removal exclusions or requirements for specific activities are covered in the regulations sections for those activities (for example, Sections 816.152 and 816.162 (topsoil removal for roads) and Section 816.46 (sedimentation structures)). Therefore, this paragraph is unchanged.

Paragraph (b): Materials to be removed. Numerous comments were received objecting to the provision for removal of all topsoil. Commenters generally argued that this provision was far too broad and does not consider such factors as low productivity, rocky soils, operator safety on steep slopes, machine technology, suitability of topsoil, topography, and vegetative cover. They contended that the Office lacks justification to require all topsoil to be removed with no consideration given to the aforementioned factors. This paragraph is intended to implement the mandate of section 515(b)(5) of the act, which the Office believes requires removal of all topsoil except in those situations where removal of substitute material is approved. The exception for the use of substitute materials enables the regulatory authority to consider those factors listed as concerns by the commenters.

Paragraph (c): Material to be removed in thin-topsoil situations. Commenters contended that Paragraph (c) ignores situations where it might be appropriate and beneficial to salvage at least portions of the B horizon along with the A horizon, irrespective of the A horizon thickness. The requirement of 6 inches is intended to be a minimum. Section 816.22(d) authorizes the regulatory authority to require that additional material be saved if necessary to ensure soil productivity.

Commenters argued that the regulations ignore situations where there is no topsoil and no surface material suitable for plant growth. In order to make it clear that substitutes and supplements can be used in these situations, the Office has added a reference to Paragraph (e) of this Section.

Paragraph (d): Subsoil segregation. Numerous comments were received objecting to this paragraph. Commenters generally argued that permitting the regulatory authority to impose a requirement to separate and segregate the B and C horizons is beyond the scope of Section 515(b)(5) of the Act. This separation and segregation may be necessary in some situations to meet the requirements of Section 515(b)(6) of the Act and for the land to be restored to a condition capable of supporting its premining use. The Office has, therefore, elected to retain the requirements so the regulatory authority may require separation of the horizons when necessary to obtain soil productivity. Powers and others (1978, p. 73) found that replacing topsoil (primarily A horizon material) and subsoil (primarily B horizon) in separate layers was superior to mixing the two materials. (See Aldon, 1978, p. 77).

Paragraph (e): Topsoil substitutes and supplements. Paragraph (e) of this section was incorrectly numbered in the proposed regulations, and the numbering has been corrected.

A commenter noted that toxicity of the overburden material should not be based on sulfide content alone, because neutralizing material is often available in the overburden that can be used to reduce the pH level. Since some strata contain neutralizing material that can be used to prevent excessive acidity, the Office concures that the analysis should be expressed in terms of net acidity or net alkalinity. (See Plass, 1978, p. 57; Grandt, 1978 p. 64.)

A number of commenters argued that the test for nitrogen may not always be essential and that the determination of need for the test should be made locally. The Office agrees, and the need for tests of nitrogen will be determined by the regulatory authority.

Commenters contended that conventional wet or dry oxidation methods of determining organic matter reflect geologic carbon as well as recent soil organic materials. Since carbonaceous material that has little value for plant nutrition will be reflected in tests for organic matter, this test has been deleted as a general requirement. It may be required when determined necessary by the regulatory authority.

Commenters pointed out that water-holding capacity is associated with soil texture and soil structure. They argued that structure will be modified by moving the soil and that measuring the water-holding capacity of the undisturbed material before mining will not be a reliable indicator of water-holding capacity of the soil after mining. The Office concurs, and the requirement for a specific test for water-holding capacity was deleted and is now at the discretion of the regulatory authority.

Several commenters stated that the proposed regulations in Sections 816.22(e) and (e)(1) are not consistent in that the first paragraph says "equal to or more suitable" and the second

says "more suitable." This was a valid comment and the Section has been rewritten accordingly.

A number of commenters responded to the requirement that qualified soil scientists and agronomists certify test data. One suggested that additional professionals, such as geologists and foresters, should be added to this list. Other commenters stated there were no standards for approving laboratories; therefore, it would be sufficient to have the soil tests performed by a laboratory using standard testing procedures. The Office has determined that the regulatory authority approval of a laboratory using standard procedures is adequate to assure reliability of the test results, because standard laboratory procedures exist that are regionally accepted for soil analysis.

A commenter suggested deleting "segregated" from paragraph (e)(4). It was suggested that this change was necessary to allow the mixing of strata in areas where it could be shown that the mixed overburden is equal to or more suitable for the approved postmining land use than is the available topsoil. The Office has determined that these regulations provide for the mixing of strata under paragraph (e)(1) and that the wording of (e)(4) should be retained to assure that substitute materials are segregated when necessary to protect the substitute materials from contamination by materials unsuitable for plant growth.

Paragraph (f): Limits on topsoil removal area. A commenter suggested deleting paragraph (f)(2) because it is inconsistent with the heading "topsoil removal" and is duplicative of Section 816.24(b)(3). The provisions of paragraph (f) provide guidance for limiting the size of the area from which topsoil is removed at any one time, and Section 816.24(b)(3) relates to redistribution after removal. Thus, the Office elects to retain paragraph (f)(2) of Section 816.22 to provide for limiting the size of the area of topsoil removal so this variable can be controlled, thereby minimizing air pollution and disturbance to the hydrologic balance that could result when extensive areas of topsoil are removed before actual mining of the area.

A commenter suggested adding a new paragraph called "Toxic Topsoil" to Section 816.22. The paragraph, as proposed, would require toxic topsoil to be treated like all other toxic materials. Section 816.103 of these regulations provides direction in handling all acid and toxic-forming materials. The Office has determined that the toxic surface layer would be considered as toxic material under Section 816.103 and that the proposed addition to the regulations is not necessary.

§ 816.23 Topsoil: Storage.

Section 816.23 is intended to protect the physical and chemical qualities of topsoil while that material is being stored. Plass (1978, p. 57) writes that "planned placement may segregate material suitable for revegetation," and McCormack (1976) states that burying the A and B horizons under many feet of spoil during a surface mining operation is not compatible with full restoration of productive potentials.

The requirements of this Section are essential for protecting the quality of the topsoil and other materials that are to be distributed as the surface layer. Thus, initial placement must be selective so as to protect the material from wind and water erosion and protect the physical and chemical qualities of soil materials while those materials are being stored. For example, a vegetative cover may be required immediately after a portion of the stockpiled material is in place, if the growing season permits or if it is required for stability and to keep important nutrients from breaking down and leaching out.

The removal prohibition is intended to minimize chemical and physical losses that may occur when soils are handled excessively. Likewise, the Office recognizes that it may sometimes be necessary to move stockpiled materials before they are redistributed. These regulations allow removal from one stockpile area to another area after regulatory authority approval is obtained.

A commenter proposed that stockpiling of topsoil for roads associated with coal exploration be eliminated from the regulations. It was argued that only a minimal amount of surface material need be removed to allow 4-wheel-drive vehicles to get to and from the site and that the surface material can be pushed to the side of the road and redistributed throughout the distributed area immediately after the drilling site is evacuated. The commenters' concerns are dealt with in the preambles to Part 815 and Sections 816.150–816.176.

Commenters suggested that requiring both annual and perennial plants to be seeded may not be appropriate, realistic, or cost effective. The Office concurs that the seed to be used should be determined according to site and operational situations, and those situations are provided for under Paragraph (b)(1)(ii).

Commenters wanted this Section to require that stockpiles be seeded or planted immediately, or that mulch be used when temperatures are too low to establish vegetation when needed to control erosion. Section 816.113 of the regulations requires seeding or planting during the first normal period favorable for planting conditions, and mulching is required when necessary to protect the soil from erosion. Thus, the proposed language would be repetitive of other sections and was not deemed necessary in this section.

§ 816.24 Topsoil: Redistribution.

This Section requires that regraded land be scarified or otherwise treated as required by the regulatory authority to eliminate slippage and promote root penetration. Scarification may be conducted after topsoiling when the regulatory authority approves. The person conducting the surface mining activity is required to redistribute topsoil and other materials to a uniform stable thickness, to prevent excessive compaction, and to protect the topsoil from wind and water erosion before and after it is seeded and planted.

McCormack (1976) wrote that "of greater importance than any other factor in achieving successful reclamation of surface mined land is the nature of the soil left at the surface after mining. The nature of this soil determines the choices available for plant species." McCormack then stated that "Soils should be reconstructed so as to have a sequence of horizons chosen from the best available soils and geologic strata. This will create the most favorable qualities for plant growth." The topsoil must be uniformly redistributed in a manner that assures placement and compaction compatible with the needs of the species that will be used to restore the disturbed area to its premined potential.

Lull (1959, p. 27) found that soil compaction drastically reduces the pore space through which water moves in the soil, thereby reducing infiltration and percolation, increasing runoff, and encouraging erosion. Baker (1977, p. 2) said the growth of hardwoods depends on the following soil factors: (a) Soil physical condition, (b) moisture availability during growing season, (c) nutrients available, and (d) aeration. These same factors must be considered so that the redistributed soil layers will support the vegetation required under Sections 816.111–816.117. Under Section 816.24, compaction that restricts root penetration must be avoided during topsoil redistribution since closely packed soil can be relatively impermeable (Powers and others, 1978, pp. 71–72). Numerous commenters argued that the requirement for scarification in all cases is unnecessary and that the slippage potential is low or nonexistent on level or nearly level lands and that the need for scarification depends upon site conditions such as soil type, soil depth, compaction of spoil, climate, and topography. Thus, rocky or sandy overburden often is too loose and unconso-

lidated to create slippage surfaces. Hence, mandatory scarification before replacement of topsoil may not serve the objective of protection of topsoil from contamination on all sites. Further, it was contended that compaction depends upon equipment used and overburden material characteristics. The regulation as written provides that regraded land shall be scarified or otherwise treated. Therefore, a change in the regulation is not necessary, since the method to be used to eliminate slippage may be determined on a site-by-site basis.

§ 816.25 Topsoil: Nutrients and soil amendments.

This Section sets forth soil nutrient and amendment provisions to ensure that the surface soil layer will support the revegetation requirement of the postmining land use. The soil tests that are used to determine soil productivity and fertilizer and soil-amendment needs are to be performed by a qualified laboratory using standard methods approved by the regulatory authority.

Like Section 816.22, Section 816.25 provides for utilization of the results of soil tests, trials, analyses, and surveys required by Section 779.21 of these regulations. The availability of mineral elements essential to plant growth varies considerably in strata of the overburden. This wide variation in available plant nutrients makes it advisable to sample the surface material to determine if the proposed land use and vegetative plan is feasible (Plass, 1978, p. 58). If the strata of overburden contain good supplies of mineral nutrients, these materials if properly used on the mined and graded lands will provide adequate nutrients. However, some soil materials will require the addition of amendments to establish vegetation that can be sustained on the disturbed area (Grandt, 1978, p. 64, and Aldon, 1978, p. 78).

A commenter suggested a rewrite of this Section that would specify the necessary chemical analysis. The provisions of this new section, as suggested, would include guidance on representative samples, limestone fineness and depth of incorporation, and frequency of testing. The Office believes that the suggested language is duplicative of the provision contained in Section 816.22(e), and that analysis details should be developed by the regulatory authority; therefore, the commenter's alternative has not been accepted.

A commenter suggested deletion of the phrase "in the amounts determined" and the inclusion of "if shown to be required" by soil tests "and known plant nutrient requirements" to assure that the basis for making lime and fertilization recommendations was correlated with crop responses in the field. Further, it was stated that many native species of plants have not been extensively analyzed for nutrient requirements and that soil tests by themselves cannot provide enough information to prescribe nutrients. The Office rejects this recommendation because the Section clearly indicates that the recommendations are to meet the revegetation requirements and are not a blanket requirement to apply nutrients or amendments.

Numerous commenters expressed various opinions on requiring that soil tests be certified by a soil scientist or agronomist. Some contended that laboratories conducting soil tests may not have agronomists or soil scientists on their staff, yet the laboratory is qualified to conduct soil tests. Other commenters said that approval of the laboratory was not necessary, only the certificaton by an agronomist or soil scientist; and a third group said that the regulatory agency should be restricted to approving the testing methods.

After careful consideration, the Office has determined that the requirement for certification by a soil scientist or agronomist is not necessary when soil testing is a major activity of the laboratory and the laboratory is approved by the regulatory authority. Therefore, the Office has deleted the requirement for certification by a soil scientist or agronomist because other specialists (for example, analytical chemists or soil scientists) may be equally well qualified to certify the soil-testing procedures and results. To assure that soil tests are conducted by qualified personnel, the Office has accepted the recommendation that tests be performed by a qualified laboratory using standard methods approved by the regulatory authority. This requirement will produce results that can be compared and will be the only necessary control since regulatory authority approval of the laboratory amounts to approval of the qualifications of the laboratory personnel.

§ 816.41–816.57 Hydrologic balance.

These Sections require that surface coal mining and reclamation operations be planned and conducted so as to minimize disturbance to the prevailing hydrologic balance. The purpose of these requirements is to ensure that both long-term and short-term adverse changes in the hydrologic balance, that could be caused by mining and reclamation activities, will be prevented or minimized both on and off the mine site.

The authority for these Sections is set forth in the Act at Sections 102, 201, 501, 503, 504, 507, 508, 509, 510, 515, 517, 519, 522, 701, 717.

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816.41 Hydrologic balance: General requirements.

Section 816.41 sets forth in general terms the hydrologic requirements for surface mining activities. In light of the testimony presented before Congress during deliberations over the Act, the requirements of the Act, and State regulations on the subject, details are provided which are believed to be sufficient to ensure that, on a national basis, all surface coal mining and reclamation operations are conducted in an environmentally acceptable manner. The process of surface mining involves a number of changes in land cover, drainage pattern, and nature of the overburden that may markedly alter the hydrology of an area. (See the Environmental Impact Statement accompanying these rules, Section III-B, Water).

Past studies have documented changes in flooding, base flows, sedimentation, and water quality in streams draining mined watersheds (Curtis, 1972a, 13 pp; b, p. 2; 1973, p. 3; 1974, p. 2; Davis, 1967, pp. 426-428; Gilley and others, 1977, p. 23; Plass 1975, p. 18; Simpson, 1977, p. 8). In addition, adverse impacts can occur to the groundwater resource and in downstream stream flow and erosion characteristics by mining (Dyer, 1977, p. 13), although these latter changes are less easily documented and usually become a consideration only when large areas are mined. These various impacts result because interruptions in one or more components of the hydrologic cycle of an area often affect other components in the system (Gregory and Walling, 1973, p. 456). For example, the changes in water yield associated with removing vegetation to expose soil in surface activities can result in stream channel instability problems (Galbraith, 1973, p. 21). Other examples are discussed in the Environmental Impact Statement, Section III-B, Water). Therefore, it is important that the hydrologic balance of an area to be mined be altered as little as possible as a result of surface mining.

The regulations are structured on the premise that the applicant for a permit will research and understand the hydrologic balance in the mine plan and adjacent areas prior to mining, as well as understand the potential impacts of mining on that balance, so that operations are planned and conducted to minimize disturbances to the hydrologic balance both onsite and offsite. Since the hydrologic balance may be restored only after long periods of time (Surface Mining Control and Reclamation Act, House Report No. 95-218, p. 113), it is necessary for the permittee to project long-term implications of the mining.

The primary source of legal authority for this Section is Section 515(b)(10) of the Act.

1. Several commenters suggested that the language of Sections 816.41(a) and 817.41(a) be changed so that it would be necessary to plan for protecting the hydrologic balance on only the "affected area" and not the "mine plan area." The Office recognizes that there was an error in the proposed rules since "mine plan area" is the "affected area." Thus, the word "affected" was replaced with "adjacent." The phrases "mine plan area" and "adjacent areas" must be retained. A plan of activities for a permit must include both the hydrologic balance of more than just the permit area, because sections 507, 508, 510 and 515 of the Act require protection of the hydrologic balance off the mine site.

2. Several commenters suggested that Sections 816.41(a) and 817.41(a) of the regulations be changed to copy the language of Section 515(b)(10) of the Act, which requires that disturbances to the hydrologic balance be minimized. This suggestion is rejected, because Congress intended that its general language be fleshed out with more specific and precise regulations (Sections 501(b) and 201(c) of the Act). Many of the terms used by Congress are not defined or explained and thus are too vague to be enforced effectively until given more precise meanings. The Office has the responsibility to determine what key terms like "minimize" and "best technology currently available" mean within the framework of technical knowledge and other applicable law.

3. Several commenters stated that, under State law, water appropriations can lawfully disturb the offsite hydrologic balance and Sections 816.41(a) and 817.41(a) should be clarified accordingly. OSM position on this is that Federal laws and regulations is controlling in the unlikely event of a conflict and the additional language is not necessary.

4. One commenter suggested changing Sections 816.41(a) and 817.41(a) so that mining on a watershed would be phased to minimize the amount of land disturbed at any one time, in accord with the probable cumulative impacts on all anticipated mining in the general area. See 30 CFR Section 786.19(c). The commenter stated that the greatest disturbance of the hydrologic balance occurs during active mining operations; consequently, minimization of disturbance of the hydrologic system can only be accomplished if mining operations in a watershed are phased to minimize the amount of land under active mining at any given time. The alternative of changing Sections 816.41(a) and 817.41(a) to include this statement was considered and rejected since no significant advantage would be realized from this change. OSM feels that the present wording allows for phased mining on a watershed. The regulation which provides for this control is Section 786.19(c) which places the responsibility on the regulatory authority for assessment of probable cumulative impacts of all anticipated mining in the general area upon the hydrology of the area.

5. Three commenters felt that Sections 816.41(a) and 817.41(a) should be changed to delete "in the depth . . .

surface drainage channels' because constraints on individual elements of the hydrologic system are not necessary to preserve the overall hydrologic balance. The Office rejected this proposal, because the regulations do not require that the exact ground water levels be maintained, but rather that changes brought about by mining are required to minimize the disturbance to the prevailing hydrologic balance (Section 515(b)(10) of the Act).

6. One commenter suggested that Section 816.41(c) be deleted since it is not necessary in order to require compliance with other applicable laws and regulations. This suggestion was rejected since this Section provides guidance of the general requirements that the permittee must meet, and further OSM is required to ensure protection of the hydrologic balance as may be required by these other laws.

7. Several commenters questioned the provisions of Sections 816.41(d). The commenters were divided on their position; some felt that this Section should be expanded to cover more details on seeding and mulching, while others felt paragraphs (d)(1) or (d)(2) should be shortened or be completely deleted from the regulations. One alternative which was considered was to expand this Section to be more specific and more inclusive as far as the stated practices to control and minimize pollution. This alternative was rejected because Section 816.41 discusses alternative practices for protecting the hydrologic balance and is not exclusive. The details and specifics of the topics mentioned here are adequately addressed in the Sections following 816.41, and in particular Sections 816.111–816.117. Another alternative considered was to entirely delete this Section of the regulations. Commenters felt there was no need for this Section since it was alleged to lack specification, consisting of only practices which may be used to achieve the requirement of the Act. However, since this is a general Section which is designed to provide both rationale and guidance to achieve the required performance standards, it was decided to reject this alternative and to retain the language of the proposed regulations. This discussion also applies to Section 817.41(d).

8. One commenter noted that Section 816.41(d)(1) requires emphasis of practices that prevent or minimize water pollution and changes in flow, in preference to the use of the water treatment facilities. The commenter felt that this guideline effectively precludes the use of water treatment facilities even when they would merit consideration for economical reasons. This regulation is necessary to comply with Section 15(b)(10) of the Act. The office has not changed this provision, because prevention or minimization of the source of pollutants precludes the necessity of long-term maintenance of water treatment facilities and is, therefore, a more cost-effective technique.

9. Several commenters suggested that the language of Sections 816.41(d)(3) and 817.41(d)(3) be changed to clarify the intent of this regulation, especially with regard to "practices" and "for as long as treatment is required." Alternative language was considered and editorial changes were made to clarify that "these practices" refers to the practices listed in Paragraph (d)(2). The length of the period for which an operator is responsible for treatment is clarified in Section 816.42.

§ 816.42 Hydrologic balance: Water quality standards and effluent limitations.

A. *Introduction*

1. Authority for this Section is Sections 102, 201, 501, 503, 504, 505, 506, 507, 509, 510, 515, 517, 519, 522, 701, 702, and 717 of the Act.

2. This Section specifies water pollution control collection and treatment requirements and contains minimum water quality standards and effluent limitations. A general discussion of the basis and purpose of this Section was at 43 Fed. Reg. 41744–41746 (Sept. 18, 1978). To provide clarity to the reader, the Section was restructured from the proposed version to include discrete alphanumeric paragraphs.

3. Paragraph (a) of this Section establishes several important standards for the protection of the hydrologic balance from surface mining activities. Under 816.42(a)(1), all drainage from the disturbed surface areas is to be passed through sedimentation ponds prior to discharge of the drainage either to a stream or out of the permit area. Disturbed area in this context is as defined in Section 701.5, with the modifications provided by section 816.42(a)(4). That modification exempts certain areas from 816.42 which are to be regulated with respect to sedimentation and acid or toxic mine drainage by other provisions of Part 816. See, e.g. Sections 816.43, 816.44, 816.45, 816.47, 816.48, 816.150 *et seq.*

4. Of course, in addition to sedimentation, persons must use treatment facilities to reduce acid or other toxic contents of drainage from the disturbed area, to meet the effluent limitations of Section 816.42(a)(7) for pH, iron, and manganese, and any other pollutant parameters limited by applicable State or Federal law. See Sections 816.41(c), d(3); 816.42(a)(7).

5. Sedimentation ponds utilized to satisfy the requirements of 816.42 (a)(1)–(2), are to be designed, constructed, operated, maintained, and removed according to the requirements of Section 816.46. They are to be constructed before the commencement of mining operations. See Section 816.42(a)(5). Use of sediment ponds, in conjunction with other control measures, will implement the Act's requirements for use of the Best Technology Currently Available for limiting sedimentation (Section 515(b)(10)(B)) and protection of fish and wildlife (Section 515(b)(24)) of the Act, and to minimize disturbance of the hydrologic balance during and after mining (Section 515(b)(10)). The preamble to Section 816.46 contains a detailed explanation of the Office's determination regarding Best Technology Currently Available with respect to sedimentation.

For acid and other toxic mine drainage, treatment facilities are to be required during and after mining operations as necessary technology under Section 515(b)(10)(A) of the Act and Best Available Control Technology under Section 515 (b)(24) of the Act. (Barthauer, 1971, 10 pp.; Calhoun, 1968, pp. 78–40; Colgate et al., pp. 46, 47; Grim and Hill, 1974; pp. 198–200, 269–273; Kosowski; 1973, 83 pp.; Maneval, 1975, pp. 210–219; Martin, 1974, pp. 26–37; Robins et al. (USEPA), 1977, pp. 3–4; USEPA-1973(b), pp. 87–105, 215–359; USEPA, 1976 (b), Vol. 1, pp. 13–84, Vol. 2 pp. 81–88, USEPA-1977a (42 *F.R.* 21380–21390)).

6. Sediment ponds and other treatment facilities are to be utilized until regulatory authority approval for their removal is granted under Section 816.42(a)(2), which principally implements Section 515(b)(10) and 519(c)(2)–(3) of the Act. Exemption from the requirements of Section 816.42(a)(1)–(2) only may be authorized for drainage from "small" areas under Section 816.42(a)(3), to avoid causing more disturbance of land to construct sediment ponds than will result from the small disturbed drainage area itself. However, even this exemption can only be authorized if the drainage will still meet applicable effluent limitations and water quality standards for receiving waters.

7. Under Section 816.42(a)(b), both drainage from disturbed areas which is mixed with drainage from other areas together must achieve the effluent limitation of Section 816.42(a)(7). This is specified to avoid ambiguous interpretation, as may have resulted with the proposed version of Section 816.42(a). That Section provided that "discharges of water from areas disturbed by surface mining activities shall be made in compliance with all Federal and State laws and regulations . . .". Proposed Section 816.42(a) also provided that all surface drainage from the disturbed area, was to be passed through a sedimentation pond

or a series of sedimentation ponds before leaving the permit area.

The Office has experienced interpretative questions in the field under the interim program regarding responsibility of operators for discharges of drainage from sedimentation ponds which mix drainage from areas disturbed by current surface coal mining and reclamation operations with drainage from other areas undisturbed by those operations, such as previously mined land. The Office interprets the relevant provision of its interim regulations, 30 CFR 715.17(a), to impose on the operator, in such circumstances, the obligation to achieve the effluent limitations for all of the mixed drainage, not just a portion of it.

Section 715.17(a) and proposed Section 816.42(a) require that "discharges from areas disturbed by surface coal mining and reclamation operations must meet all *applicable Federal* and *State laws and regulations . . .*" (emphasis added). Under Section 301 and 401 of the Clean Water Act, *as amended* (33 U.S.C. 1311, 1341(b)), mixed drainage from current coal mining operations and other areas discharged from a sediment pond is deemed to be a "point source" and, therefore, required to meet the relevant EPA effluent limitations, including application of such limitations in the case of commingling drainage from "active" and "inactive" areas as defined by EPA (40 CFR 434.32(c) 1978. 30 CFR Section 717.15(a) and proposed Section 816.42(a) thus implied) that mixed discharges must not be violative of ". . . applicable Federal . . . laws and regulations . . ."

In addition, Sections 715.17(a) and proposed 816.42(a) required that all discharges from areas disturbed by surface coal mining and reclamation operations must meet, *at a minimum*, certain specified quantitative effluent limitations for total iron, total manganese, total suspended solids, and pH. The Office interprets these provisions to cover all discharged drainage that is *mixed* with drainage from the disturbed area. Without this interpretation, severe damage to the hydrologic balance will result from the unregulated discharges of polluted water from disturbed areas mixed with water from other sources. Moreover, field investigative and monitoring techniques are not generally available to allow for necessary precision in separating out, at the entrances and exits of sedimentation ponds, the pollutant loads of individual waters. The impracticality in the field of treating or testing a portion of the drainage discharged from the disturbed area as greater portions of the permit area are mined, therefore, requires the interpretation that all mixed drainage meet effluent limitations, in order to assure that all discharges from the disturbed areas meet the effluent limitations before leaving the permit area.[1]

Clarification of Section 816.42(a)(6) will ensure that, where the sedimentation pond or series of ponds is used in a manner as to result in the mixing of drainage from disturbed and undisturbed areas, all of the mixed drainage will have to meet the effluent limitations at the point of the last discharge from the permit area. Except to the extent that discharges from undisturbed areas are mixed with discharges from disturbed areas, discharges from undisturbed areas are not subject to the effluent limitations of 816.42(a). Thus, discharges from undisturbed areas need not meet effluent limitations where the permittee has designed diversions or other procedures to avoid the mixing of discharges from disturbed and undisturbed areas.

8. Section 816.42(a)(7) specifies the standards by which the quality of discharges of drainage from the disturbed area are to be measured. First, discharges are required to meet all applicable requirements of Federal and State law. Second, at a minimum, certain specific quantitative effluent limitations are to be achieved, according to the table at the end of 816.42(a)(7) and the interpretive material in footnotes to this table. USEPA regulations implementing the Clean Water Act's Section 402 NPDES permit system (*see* 40 CFR 434) were the base for development of the effluent limitations at Section 816.42(a)(7). However, the Office's limitations are based on the authority of the Surface Mining Control and Reclamation Act and have been modified from USEPA regulations to fully implement the provisions of the Act.

9. Section 816.42(b) is promulgated to set forth the circumstances under which discharges subject to 816.42(a) may be allowed to deviate from the effluent limitation requirements of Section 816.42(a)(7). The exemption provided for is to provide equitable relief from the effluent limitations when the discharge is subject to an extraordinary precipitation event, if the drainage involved, in fact, results from such an event.

10. The Office has coordinated these regulations with the EPA and has received that Agency's written concurrence to these regulations as they relate to EPA's water quality standards. Both agencies will strive to minimize duplicative efforts in standard setting, permit issuance, monitoring requirements, inspections, and enforcement.

Regarding coordination and minimization of permitting, the OSM regulations require that regulatory programs permitting systems under the Surface Mining Act be closely coordinated with NPDES permit requirements under the Clean Water Act. *See* 30 CFR 770.12, 778.19/783.19, 786.11(b)(c)(4); 786.12. Those procedures should serve to insure that unnecessary duplication is prevented on a case-by-case basis. Discharger monitoring requirements have been coordinated as discussed in the preamble to Sections 816.52 and 817.52. Standard setting has and will continue to be carefully coordinated with EPA.

B. *Analysis of Comments and Alternatives*

1. Many commenters were concerned with the quantitative effluent limitations proposed by OSM at the table in 816.42(a)(2). They recommended that these be deleted so that discharges from disturbed areas would comply only with all "applicable" Federal and State laws and regulations, or that responsibility for specifying effluent limitations be left entirely to the Environmental Protection Agency (EPA) under EPA's Effluent Guidelines and Standards for the Coal Mining Point-Source Category under the National Pollution Discharge Elimination System (NPDES) Permit Program (40 CFR Part 434). These recommendations were carefully analyzed and rejected, for several reasons.

2. (a) Under Sections 301, 304, and 401 of the Clean Water Act, coal mining operations must obtain NPDES permits and comply with EPA's effluent limitation regulations (40 CFR Part 434) for point-source discharges of pollutants to surface water of the "United States." Those regulations, however, apply only during the active phase of mining operations and do not extend to the reclamation phase of mining. Further, neither the NPDES permit system nor EPA's regulations cover "nonpoint" source discharges to surface water, any discharges to ground water, or discharges to surface waters that do not meet the agency's definition of "waters of the United States."

(b) The NPDES system also assumes the existence of a point source discharge before applicable effluent limitations attach to the discharge. This system would leave entirely unregulated any *non*-point discharges, of which surface and underground mining activ-

[1] Both Pennsylvania and Kentucky State laws, preexisting the Act, also required the operator to meet effluent limitations with respect to all parts of active and inactive commingled discharges (Kentucky—*4 Ky. Admin. Reg.* 1:055—Section 2 (July 2, 1975); Pennsylvania—*See Commonwealth* vs. *Barnes and Tucker Co.*, 455 Pa. 392, 319 A2d. 871 (1974), *aff'd. after remand*, 472 PA 115, 317 A2d. 461 (1977); *Commonwealth* vs. *Harmar Coal Co.*, 452. PA. 77, 306 A2d. 308 (1973).

ities have many, largely resulting from the storm water runoff over surface areas and ground waters exciting underground mine workings. Under Sections 102, 506, 510, 515, 516, and 517 of the Act, however, all water discharged as a result of coal mining and reclamation operations which could materially damage the hydrologic system are to be regulated through a permit system and regulations, which will require collection of non-point runoff and treatment to limit discharges of pollutants to ground or surface waters. H.R. Rep. No. 95-218, 95th Congress 1st Session at 114; USEPA (1976 b), vol. 1 at 19; USEPA (1973(b)) at 156-157. Further, under Sections 515(b)(10) and 516(b)(9) of the Act coal mining will be regulated through both the mining and reclamation phases. Therefore, the requirements of 816.42 included the effluent limitations already applicable to coal mining point sources and also provisions to fill gaps not now covered under the present national EPA regulatory program. (*See In re Surface Mining Regulation Litigation*, 456 F. Supp. 1301, 1313-1315 (D.C.D.C., 1978)).

3. It is noted that *non*-point source discharges to surface waters and some discharges to groundwater could be regulated by USEPA. Section 208 of the Clean Water Act provides for the development of programs controlling nonpoint source discharges from mining. Section 304(e) of the Clean Water Act allows EPA to control runoff to surface waters, if the runoff contains toxic or hazardous pollutants and is ancillary to operation of an industrial establishment which itself causes "point source" discharges. Section 402(b)(1)(D) of the Clean Water Act authorized NPDES permits provisions which control the disposal of pollutants into "wells." Sections 1421-1424 of the Safe Drinking Water Act (SWDA) authorize EPA and States approved under Section 1422(a)—SWDA to issue regulations and permits to control underground injections (subsurface emplacement of fluids by well injections). Section 1424, SWDA establishes a mechanism for sole source aquifer determination and protection through withholding of Federal financial assistance. Subtitle D of the Resource Conservation and Recovery Act may, upon promulgation of the regulations, include controls over environmental contamination from coal waste disposal including protection against both surface water and ground water pollution.

However, EPA has not implemented, by regulations and State plans, any of these statutory provisions as to coal mining, nor is it expected that this will occur on a national basis in the near future. Moreover, EPA national policy is to utilize programs, developed under Titles IV-V of the Act (SMCRA) to satisfy the Section 208, Clean Water Act's State program plan requirements with respect to coal mining. Thus, the effluent limitations requirements of 816.42 will be used to satisfy 208 requirements, by inclusion of Title V SMCRA's State or Federal programs as 208 plans by USEPA.

4. A number of commenters objected to the application of the proposed effluent limitations to all surface drainage from the "disturbed areas" which is defined to include areas that have been graded, seeded, or planted. These objections resulted principally from the extension of effluent limitations ot surface drainage from areas disturbed by mining after final backfilling and grading.

In contrast, EPA effluent limitations for the Coal Mining Point Source Category under the NPDES permit system (40 CFR Part 434) apply only to active mining areas. As defined in EPA's regulations (42 FR 21383), "active mining areas" refers to "a place where work or other activity related to the extraction, removal, or recovery of coal is being conducted except, with respect to surface mines, any area of land on or in which grading has been completed to return the earth to desired contour and reclamation work has begun.".

Commenters asserted that no basis exists for extension of effluent limitations to discharges from mining operations in a "non-active" (or "reclamation") phase and that such an extension was not necessary to ensure protection of the hydrologic balance under the Surface Mining Act.

(a) There is no substantial basis in the Surface Mining Act or the record upon which the office can distinguish between "Active" and "reclamation" phases of mining and reclamation operations for the purpose of excluding the application of effluent limitations or of justifying less stringent effluent limitations.

Under Section 515(b) of the Act:

"(b) General performance standards shall be applicable to all surface coal mining and reclamation operations and shall require the operation as a minimum to . . . (10) minimize the disturbances to the prevailing hydrologic balance at the mine site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems *both during and after mining and after surface coal mining operations and during reclamation . . .*" (*emphasis added*).

Similar protection is afforded by Section 516(b)(9) of the Act with respect to underground mining. In addition, Section 519(c)(2) of the Act provides that "no part of the (performance) bond or deposit shall be released . . . *so long as the lands to which* the release would be applicable are contributing suspended solids to streamflow or runoff outside the *permit area* in excess of the requirements set by Section 515(b)(10) . . . ." of the Act. These sections clearly require runoff from the *permit area* to meet necessary requirements to protect the hydrologic balance throughout mining *and* reclamation operations. The Act does not, therefore, relieve this responsibility for any portion of the permit area or restrict the requirement to only "active mining areas."

(b) A number of commenters recommended that further data collection and analyses were necessary before the subject effluent limitations, could appropriately be applied to discharges from areas undergoing "reclamation." Once commenter recommended that while additional studies were being undertaken, discharges from disturbed areas be required only to comply with pre-determined ambient water quality levels for receiving streams during the reclamation period.

OSM believes that the control technology required to meet effluent limitations for discharges from the "active mine area" is very similar or the same as that necessary to meet effluent limitations for discharges from the "area under reclamation." See preamble to Section 816.46. In addition, compliance with the reclamation standards specified in the Act and regulations (816.100-816.117) should minimize problems in meeting the effluent limitations of Section 816.42 during the "reclamation" period, by eliminating the creation of sediment, acid, and iron that need to be treated to achieve the limitations.

Following the return to approximate original contour by backfilling and grading, it is expected that the sediment yield from disturbed areas will actually be reduced from that which occurred during "active" mining operations. Backfilling and grading to achieve appropriate premining slopes or lesser slopes (so as to eliminate highwalls and spoil piles) will result in general reduction in slopes in the vast majority of cases and, as long as slope lengths are controlled, reduce erosion and sediment yields (Grim and Hill, 1974, at p. 151 and p. 165; USEPA, 1976b v.1, at 38). As indicated in Dollhopf, D.J., Jensen, I.B., and Holder, R.L. (1977 at p. v and p. 55), topsoiled mine areas have been found to have less runoff than similar nontopsoiled mine areas and also to undergo less gully erosion. Establishment of an effective and permanent vegetation cover will provide stabilization of the soil surface with respect to erosion.

It is also expected that, following "active" mining, concentrations of acid, iron, and manganese in mine

drainage will be reduced under the regulations. This results from backfilling, compacting, grading, and covering bare spoils, pits, coal and acid- and toxic-forming materials which are susceptible to acid generation and the formation of other pollutants. (Grim and Hill, 1974 at p. 154 and p. 98-200; Hill and Bates, 1978, at p. 10-13). The regulations also require that if necessary, such materials shall be treated to neutralize toxicity in order to prevent water pollution.

Moreover, various State regulatory agencies have extended similar effluent limitations to discharges from lands that have been regraded, seeded, and planted, but which have not been relieved from bond obligations or other permit requirements. The termination of such requirements is normally tied to release of further permittee responsibility for mining and reclamation and this is often at the time of final bond release. In a survey of eleven coal-producing States (see Office memorandum to files, November 10, 1977), the Office found that ten States specifically extend effluent limitations on water quality criteria to all phases of coal mining and reclamation operations. These States included Alabama, Colorado, Illinois, Maryland, Montana, North Dakota, Ohio, Tennessee, West Virginia, and Wyoming.[2]

(a) *Arkansas*—Section 7(f), Open Cut Land Reclamation Act of 1977;

(b) *Kentucky*—402 Ky. Admin. Reg. 1:055—Section 2 (July 2, 1975). pH: 6-9; iron: 7mg/L.; no net acidity; turbidity limits)

(c) *Pennsylvania*—Section 315 of Pennsylvania Clean Stream Law, 35 *Pa. Stat. Ann.* Section 691.315 (1977); 25 *Pa. Code Sections* 95:2(a), (c); 99:33 (acid, pH, iron, total suspended solids limits); *See Commonwealth* vs. *Barnes and Tucker Co.*, 455 Pa. 392, 319 A2d 871 (1974), *affd. aft. remand*, 472 Pa. 115, 371 A2d 461 (1977) (treatment required for inactive underground mine discharges); *Harmar Coal Co.* v. *DER*, —Pa. Commonwealth—, 384 A2d 289 (1978) (surface mining);

(d) *Texas*—Section 251(h)(2), Rules of Texas Surface Mining and Reclamation Commission (Feb. 23, 1976) (suspended solids);

(e) *Virginia*—Section 907, Virginia Surface Coal Mining Reclamation Regulations (1977), (pH: 6-9);

(f) *West Virginia*—Surface Mining Reclamation Regulations—Ch. 206, Series V. Section 7B.02; (pH, iron, turbidity).

As was discerned from the survey and cited State laws, application of effluent limitations to all discharges from "disturbed areas," until such time as the requirements for achieving successful reclamation are met, is common practice supporting Section 816.42(a).

5. Several commenters asserted that sedimentation ponds may not be necessary to meet the effluent limitations of this section and to maintain water quality standards for downstream receiving waters, suggesting then there is no responsibility of the operator to show that the effluent limitations and water quality standards could be met and maintained. Furthermore, commenters argued that, if these effluent limitations could be met, then all operators should be extended the opportunity to meet this exemption. Related to the requests for elimination of the sediment pond requirements of Section 816.42(a)(1) were comments suggesting that the requirement be modified to expressly allow for use of "appropriate" sediment control facilities, rather than ponds.

Recommendations for exemptions from the requirement that all drainage from the disturbed area be passed through a sedimentation pond or a series of sedimentation ponds before leaving the permit area, were considered by the Office and rejected. An exemption was maintained for cases where the disturbed drainage area within the total disturbed area is small (816.42(a)(3)(A)).

The requirement that all drainage from disturbed areas should be passed through sedimentation ponds, with very limited exceptions, was retained, because comments did not establish a basis to modify the office's determination that sedimentation ponds represent an essential element of the "best technology currently available" to prevent, to the extent possible, additional contributions of suspended solids to streamflow or runoff outside the permit area, which is required by Section 515(b)(10)(B)(i) of the Act, and control acid or other toxic drainage under Section 515(b)(10)(A) of the Act. In general, use of sediment ponds is one of the facets of best available control technology under Sections 515(b)(10)(B)(i) and 515(b)(24) of the Act. (*See* H. Rpt. No. 95-218, 95th Congress, 1st Sess. at 114-115 (1977); and the preamble to Section 816.46.) Treatment ponds for treatment of acid and other toxic mine drainage, including chemical treatment and settling, are required under Sections 515(b)(10)(A) and 515(b)(24) of the Act. Such facilities are a necessary element of effective acid and toxic mine drainage treatment. (USEPA-1976a at 97-99, 169-170, 245, 248; Hill, 1976 at 1-2.)

Moreover, commenters submitted no data whatsoever, to show that the effluent limitation of 816.42(a)(7) could be met without the use of sediment ponds. To the contrary, available data shows that untreated sediment discharges will ordinarily far exceed the effluent limits. *See* e.g., Hill, 1976, at 7.

In response to comments, OSM did consider modifying the language allowing an exemption from the general requirement for sedimentation ponds when the disturbed drainage area to be exempted is "small", and it can be demonstrated that ponds and treatment facilities are not necessary to meet effluent limitations or applicable State and Federal water quality requirements for downstream receiving waters. The modification was to specifically provide an exemption where the disturbed area is small relative to the size of the ponds which would have to be constructed to comply with Section 816.46.

The Office considers this modification to the proposed exemption to be unnecessary, because the language of the more general exemption provides greater latitude for a determination of what is "small" and also meets the intent of the Office to recognize that, on isolated corners of operations, the building of sedimentation ponds may not be necessary to meet effluent limitations or water quality requirements and may create more deleterious effects to the local hydrologic system than the mining disturbance itself. It should be noted that, in such cases, other sediment control measures, as discussed in Sections 816.41 and 816.45 are required.

Some commenters expressed the concern that the small area exemption will be abused to the extent of becoming the rule. The Office is aware that this provision, like many others, is possibly subject to abuse and will attempt to review exemptions to determine, if modifications in the exemption language are necessary. Further, an added measure of control over the use of this exemption is provided by requiring a demonstration by the operator that effluent limitations and water quality requirements will be complied with without sedimentation ponds or treatment facilities.

6. A number of commenters expressed concern as to the criteria of the proposed rule for allowing removal of sedimentation ponds and other treatment facilities at the conclusion of reclamation. The concerns did not focus on the proposed requirement that the revegetation criteria of Sections 816.111-816.117 be met prior to removal, but rather on the water quality requirements that were proposed as an additional criterion for authoriz-

[2]The only surveyed State which did not indicate a clear intention to extend effluent limitations to the reclamation phase was New Mexico; in this case, EPA issues discharge permits for discharges from coal mines and the "extension issue" has never been addressed by the State. In addition, similar effluent limitation requirements for all phases of mining were directly imposed upon the industry under several States' laws as noted below, prior to and at the time of passage of the Act:

ing removal of treatment plants and release of bonds. As proposed, Section 816.42(a) required that the discharges meet "the ambient surface water quality requirements of Section 816.52." The reference to Section 816.52 lead to confusion, because it did not specifically contain standards for ambient surface water quality, but rather addressed monitoring.

Some commenters assumed that the requirements of Section 816.52 called for compliance with the effluent limitations of 816.42(a) as a criterion for sedimentation pond removal, arguing that in some cases, drainage from properly reclaimed areas may exceed the proposed effluent limitations.

Due to the interpretative problems inherent in the proposed rules, the Office considered three alternative criteria to serve as a basis for authorizing removal of sedimentation ponds and treatment facilities and consequent bond release at the conclusion of reclamation activities.

The first alternative, which would have required compliance of discharges only with "ambient water quality conditions," was rejected, because OSM believed it to be illegal under SMCRA and the Clean Water Act. Ambient water quality may be poorer than natural conditions due to pollution from human action and therefore, may be in excess of the water quality standards for streams set by EPA and the States under Sections 302 and 303 of the Clean Water Act (33 U.S.C. Sections 1302, 1313). See also, 40 CFR 130-131. By passage of SMCRA and the Clean Water Act, Congress intended to enhance the achievement of water quality standards, not just maintain unacceptably polluted ambient, conditions.

A second alternative considered would have allowed for removal of sedimentation ponds, and other treatment facilities, when untreated drainage from disturbed areas met the effluent limitations prescribed in the table in Section 816.42(a), at the conclusion of reclamation. This alternative was rejected, in recognition of the fact that in many areas it would be impossible, because natural conditions of unmined land often yield surface water discharges with sediment in excess of the effluent limitations of 816.42(a). The SMCRA does not require perpetual treatment of drainage from mined, but reclaimed land to achieve water quality superior to standards established under the laws for effluent limits. Therefore, the Office has adopted a third alternative which allows removal when untreated drainage from the disturbed and reclaimed area meets applicable State and Federal water quality standard requirements for receiving streams. This will necessitate a showing by the operator, based on monitoring data collected in the stream receiving discharges from the operative treatment facilities and of the discharges, that reveals receiving streams quality standards will not be violated upon removal of the sedimentation ponds and other treatment facilities.

In adopting this alternative, the Office recognizes that there may be some situations where the State water quality standards are quite stringent. To the extent that this exists the Clean Water Act and Sections 120, 151(b)(10), and 702 of SMCRA require compliance with those standards. Where there are no numerical stream water quality standards for the receiving waters of a particular operation, the Office will apply a policy of judging bond release applications for ponds according to the first alternative discussed above, with appropriate modifications. Thus, in those situations, the permittee will be required to demonstrate that untreated drainage from a disturbed and reclaimed area does not cause an increase in levels of suspended solids, net acidity, total iron or other relevant pollutants above the ambient, pre-mining levels of the receiving stream. However, the pre-mining level is to be determined by excluding unusual, aberrational measurements of pollutants in the stream.

7. A number of commenters suggested an alternative to the effluent limitations proposed in Section 816.42(a). Specifically, commenters recommended that effluent limitations for total suspended solids or pH be derived on a site specific basis so as not to exceed determined baseline water quality levels of receiving surface waters. As support, these commenters cited examples of cases where existing background surface runoff water quality conditions exceed the proposed, effluent limitations for total suspended solids and pH. In addition, commenters noted potential problems of increased erosion which may result from the discharge of water with low (relative to ambient) total suspended solids concentrations to surface waters. Commenters also noted increased treatment costs in order to comply with the effluent limitations. Upon consideration, the Office has decided not to adopt this alternative.

First, EPA effluent limitations regulations require that discharges from coal mining operations be limited on a uniform national basis to not greater than 70 miligrams per liter daily maximum and 35 miligrams per liter daily average for total suspended solids and to an allowable pH range of between 6.0 to 9.0. Under the Act, the office must adopt regulations at least as stringent as those promulgated by EPA. Therefore, OSM, does not believe it has legal authority to adopt the alternative proposed by the commenters. Second, Section 515(b)(10) of the Act requires that discharges of suspended solids from areas disturbed by mining operations be limited by the use of the "best technology currently available." Section 515(b)(24) of the Act requires similar technology to protect fish and wildlife. The effluent limitations for total suspended solids and pH under the regulations are achieved by use of the "best technology currently available," for controlling those parameters as is explained in greater detail in above and in the preamble to Section 816.46. Establishing effluent limitations merely upon the basis of the quantities of pH or sediment in receiving waters would not represent the use of the "best technology currently available."

Closely related to these comments were others suggesting that the Act limits OSM's authority to regulate suspended solids to only those amounts of solids directly resulting from mining operations; that is, OSM may only require achievement of suspended solids effluent limits at the point of discharge which allow a credit for any amounts of suspended solids that were in the water when it entered the "distrubed area" as defined by 816.42(a). The Office rejected this argument.

Unlike many industries, such as iron and steel manufacturing and fossil-fuel electric power production coal mining operations do not involved processes whereby water is introduced at discrete and, therefore, easily measurable points where "background" conditions could be established. In contrast, surface mining activities involve the movement of overland surface and shallow groundwater (e.g., nonpoint source) flows into and over disturbed areas. No single, discrete points exist for establishing, on a routine basis, sediment or pH loads at "background" levels. (See., e.g., USEPA, 1976(b,) Vols 1-2; USEPA, 1976(a)). In underground mining, water enters the workings by percolation over large areas down from surface areas through strata overlying the workings. (USEPA, 1976(c)). Again, no discrete points exist to routinely sample for establishing "background" levels.

In addition to the impracticality of establishing "background" levels of sediment entering disturbed areas, the Act nowhere requires such a result.

Section 515(b)(10)(B) of the act requires use of best available control technology to prevent ". . . *additional contributions* of suspended solids to stream flow or runoff *outside* the permit area." The Office interprets this language of the act to require that operations regulated by the act utilize best available control technol-

ogy to prevent increases in sediment loads in streams or other surface waters below the point of discharge from the operations.

The legislative history indicates that Congress understood this to be the preferred interpretation, because Congress specifically rejected language in Section 515(b)(10)(B) of the Act that would have tied reduction of suspended solids to "natural levels." Such a provision in the 1977 Senate bill (S. Rept. No. 95-128, 95th Congress, 1st Sess. at 25 (1977)) was eliminated in the Conference Committee. Further, the House Committee, whose bill become this portion of the Act, specifically recognized that use of best available control technology could result in discharges at levels better than receiving streams. *See* H.R. Rept. No. 95-128, 95th Congress, 1st Sess. at 115 (1977).

OSM realizes that potential does exist for increased instream erosion resulting from discharges with low suspended solids concentrations. However, the Office believes that the effective utilization of discharge structures, as specificed by section 816.46-816.47, should reduce the erosion potential to an acceptable level (USEPA, 1976(b), Vol. 1 at 35-36; Vol. 2 at 9-23), and, second, that the possible harm from erosion is outweighed, on a national basis, by the reduction in discharges of large amounts of solids and acid that otherwise pollute receiving streams, as it explained in greater detail at the Final EIS, BIII-52/53.

8. The table of Section 816.42 which includes applicable effluent limitations has been revised to incorporate recent revisions in the EPA Effluent Limitations for the Coal Mining Point Source Category. See 44 FR 2586 (Jan. 12, 1979). Footnote 6 has been added to the table to provide for effluent limitations for iron (total) of 6.0 miligrams per liter, maximum allowable) and 3.0 miligrams per liter (average of daily values for 30 consecutive discharge days). The stricter effluent limitations applies to discharges from new sources, as defined under 40 CFR section 434.11(i).

9. Several commenters questioned the more stringent restrictions in the proposed rules on total suspended solids concentrations for discharges from mining operations in the eight Western States prescribed by footnote 4 to the table of effluent limitations in proposed Section 816.42(a). The majority of commenters expressed concern that the more stringent effluent limitations to be imposed in these States were not developed from sufficiently sound technical reasoning and were not compatible with naturally high total suspended solids concentrations of surface waters in the West. (U.S. Geological Surface Water Resource Data for North Dakota, Water Year 1976; U.S. Geological Survey Water Data Report ND 76-1, pp. 419-420.)

Opinion was expressed that, based on the proposed effluent limitations, Western operations would unjustly be required to discharge insignificant quantitites of good quality water into large quantities of very poor quality receiving waters. Another commenter stated that although the Western arid climate means less precipitation and less potential runoff, vegetation is oftentimes sparse and soil erodibility is potentially high. Therefore, sediment concentration higher than normal in runoff is highly probable. In general, commenters noted that a more valid set of effluent limitations would be limitations based on background (or natural) water quality levels associated with the mining area. The Office declined these suggestions.

EPA's Effluent Limitations for the Coal Mining Point Source Category (40 CFR 434) establish a separate subpart for coal mines in Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming. In these States, total suspended solids limitations are to be determined by the NPDES permit-issuing authority. This special Subpart was established based on data gathered from NPDES permit reports and sampling and analyses at certain Western coal mines. These data indicate that many of these mines have been able to discharge pollutants (specifically total suspended solids) in lower concentrations than Eastern coal mines. These data indicate that many of these mines have been able to discharge pollutants (specifically total suspended solids). In lower concentrations than Eastern coal mines.

It appears that several factors may explain this difference. First, Western coal mining operations generally involve activities on relatively more level topography (i.e., area-type surface mines) than the steep slopes which characterizes the majority of Eastern coal mining operations (See H.R. Rep. No. 95-218, 95th Congress, 1st Sess. at 77, 103-105 (1977)). Disturbances of areas with generally more gentle slopes results in slower runoff rates and allows for opportunities for enhanced water infiltration and thus reduced runoff volumes from the sites. (*See* H.R. Rep. *supra.*, at 105,116: USEPA, 1976(b), Vols. 1-2 Therefore, runoff in such areas should have less capacity for sediment entrainment and transport, and, assuming other factors to be equal, should have reduced total suspended solids concentrations. Another relevant factor is the emphasis in the West to conserve scarce water supplies. The utilization of sediment ponds to collect and store runoff for intended uses (e.g., for fugitive dust control) provides for extended detention times which reduced total suspended solids concentrations in sedimentation pond discharges (Haan. et al. and Barfield 1978 at 66, Kathuria et al. at 56 1976, Ward, et al. 1978 at 30).

EPA's special Western category regulation is implemented by EPA Region VIII, which issue NPDES permits and oversees State programs which issue NPDES permits for coal mining operations in Colorado, Utah, Wyoming, Montana, North Dakota, and South Dakota. EPA Region VIII has developed and implemented a Regional Policy (Walline, 1977, 2d p.) which specifies quantitative effluent limitations for total suspended solids (30 miligrams per liter as a 30-day average and 45 miligrams per liter as a daily maximum), essentially identical to the effluent limitations specified in footnote 4 to the table of Section 816, 42(a).

The Office considers that the greater restrictions on total suspended solids in discharges from mines in the Western United States are necessary to minimize disturbances to the hydrologic balance in areas where the potential for erosion is extensive, water is critical, and soils are irreplaceable (Dollhopf, Vensen and Hadden, 1977 at V and pp. 129-135; Gilley, et al., 1977, pp. 697-700, 704; McWhorther, et al., 1977, pp. 1-357; and Haan and Barfield, 1978, chap. 1-6.) As noted previously, the effective utilization of discharge structures, as specified in Section 816.42, should reduce the erosion potential of discharges with low suspended solids concentrations.

In addition, Section 515(b)(10)(B) of SMCRA requires the use of "best technology currently available" to remove sediment from discharges from mine areas. The effluent limitations for total suspended solids as included in the table of 816.42(a)(7) represent the "best technology currently available" for controlling suspended solids, as is explained in greater detail above and in the preamble to Section 816.46. Establishing effluent limitations merely on the basis of the quantities of sediment in receiving waters would not represent the use of the "best technology currently available" as required by SMCRA.

Further, the effluent limitations as specified in footnote #4 which apply to discharges from Western mines are essentially identical to the quantitative effluent limitations provided by the EPA-Region VIII Regional Policy. Therefore, operations in compliance with the requirements of NPDES permits should have little difficulty in complying with the stricter effluent limitations of this footnote.

It should be noted that the final rules have been revised to exclude reference in footnote #4 to the States of

Arizona and New Mexico. This change has been incorporated into the footnote to assure consistency with the scope of EPA's special effluent limitations regulations, for discharges from Western mining operations.

10. Several commenters suggested that the exemption from the required use of an automatic neutralization device or process, as provided for in Section 816.42(c), be extended to operators who demonstrate compliance with only the requirement of Sections 816.42(c)(1) and 816.42(c)(3) of the proposed regulations. That is, it was recommended that the maximum mine production rate criteria (i.e., less than 500 tons per day) to qualify for this exemption be excluded. In support of this recommendation, EPA's "Development Document for the Coal Mining Point Source Category" (EPA, 1976 a, p. 4) was cited, which states that waste loads from coal mining operations are unrelated or only indirectly related to coal production quantities. Therefore, the final regulations relating to the exemption from automatic neutralization, provided for in 816.42(c), have been revised to exclude any mine size criteria and to include only criteria with respect to the degree of required treatment and assurance of treatment.

11. Several commenters expressed concern as to the wording of the large precipitation event exemption provided for in proposed Section 816.42(b)(1). This section provided an exemption to the requirement that discharges from disturbed areas be subject to effluent limitations when the discharges result from a precipitation even larger than a 10-year, 24-hour precipitation event or from a snowmelt of equivalent volume. A number of commenters noted that the term "snowmelt of equivalent volume" led to unnecessary confusion with respect to interpretation of the exemption. The final regulations, therefore, have deleted reference to this term in 816.42 (b)(1). The definition of precipitation event, in Section 701.5 of the regulations, provides clarification on the application of the exemption to snowmelt runoff.

OSM has been made aware that the proposed rules exemption was not totally consistent with the similar exemption in EPA's Effluent Limitations Regulations for the Coal Mining Point Source Category (40 CFR 434). EPA's regulations allow for an exemption when the discharge results from a precipitation event *equal to or larger than* a 10-year, 24-hour precipitation event. To provide consistency with EPA's regulations, Section 816.42(b)(1) has been accordingly revised. Regarding comments that OSM's exemption is inconsistent with the EPA exemption because OSM's exemption is tied to the occurance, in fact, of a large precipitation event, OSM believes that matter is resolved by the Agency's regulation of new source effluent limitation regulations which adopts an exemption identical to OSM and indicates that the EPA Best Practicable Control Technology regulations will be accordingly revised. *See* 44 Fed. Reg. 2587–2588 (Jan. 12, 1979).

One commenter suggested that, given the duration of some mine operations (e.g., over 40 years), utilization of a large precipitation event exemption with a recurrence interval of 10 years does not meet the requirements of Section 515(b)(10)(B)(i) of the Act. The commenter recommended use of a recurrence interval for the exemption which is more in line with the expected duration of the mining activity controlled by the sediment pond. The office has determined that the 10-year, 24-hour precipitation event exemption meets the intent of the Act, because sedimentation pond designs are based for a 10-year, 24-hour event to comply with the EPA regulations and is needed to achieve a conservative design for a structure which detains water. See the discussion in the preamble to 816.46. Moreover, Section 816.42 does not authorize the industry to use sediment ponds to treat run-off from an area larger than that which is disturbed and unreclaimed over a ten-year period. To the extent that an operation will last over a ten-year period, the permittee is only allowed to drain into a pond sized for a 10-year precipitation event from an area which is limited to land mined in the last ten years.

The recurrence interval for the large precipitation event exemption may be revised, if it is found by the Office that the hydrologic balance is not adequately protected as a result of frequent discharges from larger storms during the course of mining activities.

12. Some commenters noted that EPA regulations under the Effluent Limitations Guidelines for the Coal Mining Point Source Category (40 CFR 434) allow for a variance to the EPA effluent (limitations i.e., *more or less* stringent limitations) to provide for site-specific cases of existing mining which represent fundamentally different conditions than those which were considered in the development of the USEPA regulations. Such different conditions essentially would include factors relating to the equipment or facilities involved, the process applied, and other site-specific characteristics different than those considered in the Development Document (USEPA, 1976 a). This variance is included in 40 CFR 434.42. The Office has not revised Section 816.42(a), after analysis of these comments.

First, it is noted that no variances are allowed under the Clean Water Act from effluent limitation regulations for new sources. *E.I. du Pont Nemours & Co. vs. Train*, 430, U.S. 112, 138 (1977). Thus, there is no difference between EPA and OSM regulations on the variance question as to new coal mining operations. As to existing mines, the Office believes that no variance as suggested by the commenters should be provided in its regulation, because Congress did not intend that the regulation involved be subject to case-by-case waivers.

Congressional intention on whether a variance should be provided by an agency is controlling, *E.I. du Pont de Nemours, supra; In re Surface Mining Regulation Litigation*, 452 F. Supp. 327, 388 (D.C.D.C., 1978). As the court explained in the latter decision, the Act and its legislative history clearly indicate that Congress intended no uniform, board provisions for variance from the performance standards. The effluent limitation consitute performance standards and, accordingly, the Office believes it is without legal authority to enact a related variance procedure.

Moreover, it has not been demonstrated that the variance provision suggested by the commenters is appropriate or necessary for OSM's effluent limitations. No showing was made that EPA has ever found it necessary to grant variances from its effluent limitations, which is remarkable, in view of the large number of coal mines in the United States. Further, the commenters presented no data to establish that there are significant numbers of mining operations which materially differ from the data base from which the effluent limitations were developed. Indeed, the only significant data submitted suggests merely that some surface water contains rather high levels of suspended solids in flows from undisturbed areas, which is not relevant to determining what effluent limitations should be for water contaminated by mining. Finally, as is discussed in detail above, the data base as a whole shows that the effluent limitations can be achieved with the use of appropriate control technology.

13. Some commenters recommended that the list of effluent limitations in Section 816.42(a)(7) be expanded to include other pollutants related to coal mining, including aluminum, copper, magnesium, zinc, and sulfate. The Office has not implemented this recommendation in the final regulations. As noted in USEPA, 1976(a), treating discharges from coal mining operations to meet the effluent limitations specified in 8.16.42(a)(7) for iron, managnese, total suspended solids and pH should result in effective treatment and control of some of the additional

metals listed by commenters. *Id.*, pp. 66, 71, 170, and 172), as a result of precipitation of the metals in the neutralization process as insoluble hydrozides.

As for sulfate, USEPA 1976(a) states that sulfate in discharges from coal mining operations, although occasionally above accepted standards, are not normally at concentrations which will produce effects on water uses (*Id.*, pp. 1 and 53). In addition, the cost of necessary technology to provide reduction of this constituent at the concentrations observed in relation to coal mining discharges is not presently considered by EPA to be cost effective (*Id.*, pp. 97-99, 139-144, and 170-171).

One commenter recommended that the table of Section 816.42(a)(7) be revised to include total dissolved solids and specific numerical effluent limitations be applied to this water quality parameter. The commenter noted that control of total dissolved solids has special significance to the Western United States, particularly the Colorado River system where increased salinity concentrations have been identified as having deleterious impacts on agricultrual, industrial and domestic water uses. The EPA Development Document (pages 62, 102-138, and 148-167) identifies elevated concentrations of total dissolved solids in discharges from coal mining operations. However, this report also notes that the cost of treatment technology observed did not warrant the reductions obtained (*Id.*, pp. 97-99 and 139-144).

It should be noted that 816.42(a)(7) also requires that discharges be in compliance with all Federal and State laws and regulations. This requirement may result in specific effluent limitations for additional parameters in order to meet water quality standards in receiving waters, anti-degradation requirements, and other Federal and State laws and regulations. In addition, necessary compliance with this requirement addresses the concern expressed by one commenter that discharges from surface mining activities shall not degrade the water quality of a drinking water source. Moreover, the Act (Section 102, 508(a)(13), 510(b)(3), 522, (a)-(d), requires that mining not be permitted at all, if reclamation cannot be feasibly performed to protect water uses. Thus, to the extent that mining would produce unacceptable discharges of sulfates and total dissolved solids, the regulatory authority should not issue permits for the areas involved.

§ 816.43 Hydrologic balance: Diversions of overland flow shallow groundwater flow.

1. Section 816.43 provides for protection of the hydrologic balance of the mining area by establishing design, performance, and reclamation standards for the diversion and conveyance of overland, shallow ground water, and ephemeral stream flows. Diversions represent an important environmental tool. They may not be necessary in all cases, but they will be required where needed to prevent or minimize water pollution, to maintain the stability of fills and to protect treatment facilities. Legal authority for this section is Sections 102, 201, 501, 503, 504, 506, 507, 508, 509, 510, 516, 517, 519, and 522 of the Act.

2. The basis and purpose of this Section was explained, in general, at 43 *Fed. Reg.* 41746 (Sept. 18, 1978). Technical literature relied upon by the Office for this Section includes the material listed preceeding the discussion to 816.41 material discussed below, and, in addition:

(a) Mining Enforcement and Safety Administration, U.S. Department of the Interior, 1975, Engineering Design Manual—Coal Refuse Disposal Facilities, (Prepared by D'Appolonia Consulting Engineers, Inc., Pittsburgh, PA) Pg 6.80, table 6.8.

(b) U.S. Department of Interior, 1960, p. 291.

3. Several commentors suggested that ephemeral streams be included in the scope of overland flow and shallow ground water flow diversions. Ephemeral stream flow diversions require precautionary handling, in order to avoid excessive sedimentation and erosion (USEPA, 1976, Erosion and Sediment Control, Vol. 1 at 35; Vol. 2 at 1-10). Because ephemeral streams are smaller than perennial and intermittent streams and more nearly like overland flows, the Office has decided that ephemeral streams should be regulated similarly to overland flow. Therefore, the Office had added ephemeral streams to section 816.43.

4. Several commentors suggested that the disturbed areas which include diversion ditches, sedimentation ponds or roads be excluded from regulation under Section 816.43, as they are excluded from the definition of disturbed area under Section 816.42(a). Diversion ditches, sedimentation ponds and roads, however, must be installed in accordance with provisions of Part 816 other than 816.42(a), to prevent environmental damage to the extent possible. Especially important is that diversions be designed, constructed, operated, and maintained utilizing the best technology currently available to control sedimentation. (See Section 515(b)(10)(B) of the Act). Where these diversion ditches, sedimentation ponds, and roads are properly installed and maintained, the other requirements of Section 816.42(a) are effectively achieved; therefore, no change in the regulation was deemed necessary.

5. Paragraphs 816.43(a)-(b) specify minimum requirements for sizes of diversion facilities, with respect to the volumes of water resulting from precipitation events that both temporary and permanent diversions must achieve. Regarding the size the precipitation events involved, Section 816.43(a)-(b) refer to "peak runoff", "precipitation events", and "recurrence interval", without specifying durations of those events, as the Office's intent is to require design of diversion channels which pass safely the maximum precipitation runoff rates that occur in different regions of the country. These may vary, as one commenter pointed out, for example, from a 6-hour storm in one area to a 24-hour storm in another. Thus, diversions under 816.43 will have to be sized to safely contain and pass the peak flows resulting from the storm which produces the largest peak flow in a particular location. The permittee is not, of course, required to divert flows which exceed the required storm design under these paragraphs.

6. *Recurrence Intervals.* In the proposed rules, 3-year and 10-year recurrence intervals were specified as design precipitation event criteria for temporary and permanent diversions, respectively, under 816.43(a)-(b).

Several commentors noted that the 3-year storm recurrance interval was not readily available from the National Weather Service and suggested that the Office should use a two- or five-year recurrence interval as a standard, in line with National Weather Service data. Because temporary diversions are expected to be in place for a limited period and are of lesser hydrologic significance, a 2-year storm recurrence interval is a desired minimum, ("Engineering Design Manual-Coal Refuse Disposal Facilities", U.S. Department of Interior, D'Appolonia Consulting Engineers, table 6.8, page 6.80). The regulatory authority may increase this minimum standard where significant environmental harm may occur.

The 10-year minimum recurrence interval specified for permanent diversions has been adopted from the long established record of the U.S. Soil Conservation Service, as stated the U.S.S.C.S. comments to the proposed rules of September 18, 1978 and preproposed rules of July 21, 1978.

7. Section 816.43(b) also provides for requirements concerning the gently sloping banks of permanent diversion channels and lining requirements of those channels. These requirements are important, because they will result in a stabilized diversion channel thus reducing the sediment derived from channel cutting and reducing the potential for diversion failure. USEPA, 1976, Erosion and Sediment Control, Vol. 1, at 35; Vol. 2, at 8.

8. Commentors suggested that the permittee be allowed to innovatively use asphalt, concrete or similar channel lining material, to prevent seepage or to maintain stability. The regulations have been changed to allow this flexibility, with the approval of the regulatory authority.

9. Section 816.43(c) implements the requirements of Section 515(b)(10)(b) of the Act with respect to diversions. Several commentors suggested that the wording, "...prevent to the extent possible using the best technology currently available," be deleted from this Paragraph. This language is, however, required by Section 515(b)(10)(b)(i) of the Act. Thus no change was made in the final regulations.

10. To achieve the requirements of Section 515(b)(10)(B)(i), Section 816.43(c) specifies sediment control practices that may be used singly, or in combination. The preamble to Section 816.45 of the final rules explains the utility and purpose of these measures, in general. See USEPA, *Supra.*, Vol. 1 at 33-36; Vol. 2 at 1-13. Commenters noted that proposed Section 816.43(c) seemed to require the use of all specified measures in every case, which was not the Office's intention. As a result, the final rule was worded so that any of the measures "may" be used, so long as the requirements of Section 515(b)(10)(B) of the Act are achieved.

11. Section 816.43(d) implements Sections 515(b)(3), (4), (10), (21), and (22) of the Act, with respect to those diversions regulated under 818.43. The proposed regulations did not allow diversions to be built across slides. However, it was pointed out by several commentors that slides occur which cover spring areas, thus building up hydrostatic pressure. The regulations have been changed to allow diversions to be built across slide areas, when approved by the regulatory authority, if hydrostatic head is to be reduced to safe levels.

12. Section 816.43(e) provides for reclamation requirements of temporary diversions, to insure that lands affected by those diversions are restored in accordance with the Act. Section 816.43(f) specifies certain diversion design requirements.

In the proposed regulation, Section 816.43(f)(2) required freeboard of the diversion ditches to be set according to a formula adopted from "Design of Small Dams", U.S. Dept. of the Interior, page 291. Several commentors noted that a critical element of the formula, one-third power of the depth, (D), had been omitted from the proposed rule and should be reincorporated. Other commentors suggested the freeboard be changed to 1.0 feet, which would only have been slightly less than the ordinary solution to the proposed freeboard formula.

Upon review by OSM, the proposed freeboard requirement was shown by commenters to increase the actual capacity of diversions to approximately four times the design discharge in some instances. This was judged to be excessive for most diversions used to divert overland flow in light of the established design criteria of 0.3 foot freeboard in U.S. Soil Conservation Service diversion design, as mentioned in the above-cited SCS comments. Accordingly, the Office established 0.3 foot as the minimum freeboard, based on the standard of the U.S. Soil Conservation Service which has been tested by many years of experience throughout the U.S. See also, USEPA, *supra.*, Vol. 2 at 8.

13. Section 816.43(f)(2) also specifies that diversions are to be designed to provide for flow transition and to protect critical areas. For those cases where critical areas are protected by a diversion, a larger freeboard requirement may be justified to prevent overtopping of the diversion. USEPA, *supra.*, Vol. 1 at 7. Therefor, the final regulations allow for establishing a higher freeboard requirement to be specified by the regulatory authority.

14. Section 816.43(f)(3) requires installation of energy dissipators where diversion discharges intersect natural streams, and is to be implemented in detail, through application of the requirements of Section 816.47. See USEPA, *supra.*, Vol. 1 at 36. As proposed, disapators were required for all diversion discharges. Several commentors pointed out that energy dissipators are not always needed at every diversion outlet into a stream. Energy dissipators are needed only where velocity differences in the diversion and intersecting streams differ appreciably, causing disruption to the stream channel geometry or ecology. The Office agreed and has amended the final regulations to clarify this point.

15. To insure that Section 816.43 is administered consistently with the rest of the provisions of Part 816, Section 816.43(g) was added to the final rules to cross-reference the applicability of Section 816.55.

§ 816.44 Hydrologic balance: Stream channel diversions.

This Section established design, performance, and reclamation standards for diversions of perennial and intermittent streams, under authority of Sections 102, 201, 501, 503, 504, 506, 507, 508, 509, 510, 515, 519, and 522 of the Act. The terms "diversion," "intermittent," and "perennial" streams are defined at Section 701.5 of the regulations. The basis and purpose of Section 816.44 was explained at 43 Fed Reg. 41746 (Sept. 18, 1978). Regulation of stream diversions under Section 816.44 is deemed necessary because of the significant alteration of the hydrologic balance that may occur if these are not properly designed, maintained, and reclaimed. *See* H.R. Rep. No. 95-218, 95th. Cong., 1st. Sess. at 116 (1977); Karr and Schlosser, 1978, at 229; USEPA, 1976, Erosion and Sediment Control, Vol. 1, at 25. Technical literature used in the development of Section 816.44 includes the literature listed at the preamble discussing of 816.41, the material cited immediately above, material cited in the preamble to Section 816.43, and additional literature discussed below.

1. It was suggested by commenters that diversions of intermittent streams with a drainage basin of less than one square mile in an area be permitted without regulatory approval. In the final rules (section 701.5), intermittent stream is defined as either (a) stream draining a watershed of at least one square mile, or (g) a stream which reaches both below the local water table and obtains flow from both surface and ground waters. Thus, to the extent that a stream to be diverted satisfies the condition of the second-half of the definition of intermittent stream, Section 816.44 would apply. The Office has not exempted such diversions, because Section 515(b) of the Act requires protection of all aspects of the hydrologic balance, not just larger intermittent streams.

In arid areas, where surface waters are particularly limited, protection of small intermittent streams is particularly critical. *See* H.R. Rept. No. 95-218, 95th Cong., 1st Sess. at 116 (1977). In humid areas, even intermittent streams can cause flooding problems; therefore, requiring regulation (See the preamble to Section 701.5).

2. Several commenters suggested that ephemeral streams also be included under this section or Section 816.43 with the approval of the regulatory authority. In the final rules ephemeral stream diversions are to be regulated under Section 816.43 as is explained in greater detail in the preamble to that section.

3. *Section 816.44(a)(1).* Several commenters pointed out that the proposed regulation provided that the regulatory authority could approve stream channel diversions only if the diversion was necessary to achieve compliance with other performance standards. They argued that the rules did not recognize many legitimate uses of diversions in and around mine sites for reasons other than protecting water quality, slope stability, or treatment facilities.

The Office agreed that this limitation was not appropriate and the Office adopted the criteria of Section

816.57, pertaining to maintenance of stream buffer zones as more appropriate. Under that section, streams may be diverted and the buffer zone requirement waived by the regulatory without, under certain conditions, if necessary to facilitate mining operations. Thus, if the permittee can satisfy the requirements for waiver of the buffer zone under Section 816.57, it will also satisfy Section 816.44(a)(1).

4. *Section 816.44(a)(2)–(3).* These provisions will insure consistency in the use of diversions under Section 816.44 with other applicable legal requirements. Under Section 816.44(a)(2), the regulatory authority and permittee are to insure that diversions comply with the other requirements of this subchapter and with all applicable non-SMCRA requirements, particularly those of the River and Harbor Act of 1899 (33 USC Secs. 401 *et seq.* and the "dredge and fill" permitting requirements of Sections 208 and 404 of the Clean Water Act (33 USC Secs. 1288, 1404).

5. Section 816.44(b) establishes detailed design, performance and reclamation standards which are to be followed for those diversions authorized under Section 816.44(a). Under Section 816.44(b)(1), the diversion is to remain stable and to prevent the conveyance of suspended solids outside the permit area according to the requirements of Section 515(b)(10(B) of the Act. (*See* USEPA (1976) Erosion and Sediment Control, Vol. 2 at 9.) The second sentence of Section 816.44(b)(1) has been modified in the final rule to delete the phrase "in any event," as it was redundant in view of the rest of that sentence. No change in meaning of the sentence is made by this revision.

6. Section 816.43(b)(2) is the keystone of this Section. The sizing of diversions to adquately contain flows of water is critical. (USEPA–1976, *supra* Vol. 1, at 35–36, Vol. 2 at 6–9.) Minimum design capacities, based on the deviation and frequency of precipitation events, are specified for both temporary and permanent diversions.

In the proposed rule, the Section was worded in a manner that could have been construed to require that the channel, bank, and associated flood-plain each pass the minimum peak runoff event. Many commenters objected to that possible construction, which would have required that the new stream's channel be designed to safely pass a 10-year or 100-year storm event. The Office does not intend that the stream channel itself pass this peak runoff, but that a combination of the channel, bank, and flood plain configuration be used for that purpose. The channel should however, be designed to approximately the same size as the undisturbed inlet and outlets to and from the diversion, to decrease the potential of downstream damage. Chow, V. T. (1974, p. 7–26 thru 7–29) The final regulation was amended to clarify this point.

7. For temporary diversions, the carrying capacity required under Section 816.44(b)(2) is for the peak runoff from a 10-year storm event. The 10-year storm recurrence interval requirement is based, in part upon the success of U.S.D.A. Soil Conservation Service as explained in their comments to the pre-posed and proposed rules, and, in part, upon general practice as outlined in U.S. Mine Safety and Health Administration, 1975, p. 6. 80, table 6.8.

One commenter felt that a 10-year storm interval was excessive and suggested a three year interval that was alleged to more nearly approximate natural conditions. Natural conditions vary considerably between rainfall areas, thus natural stream channels vary accordingly. Because of this variability, a single national standard such as a three year storm interval, would not be appropriate. The Office has allowed for this variability by requiring the stream channel of the diversion to approximate the upstream and downstream stream channel. The stream channel bank, and flood plain configuration must, therefore, in total pass the peak runoff from a 10-year storm event.

8. A new Paragraph (d) has been added to Section 816.44 in the final rules, by expansion and transfer of portions of Section 816.97(d) of the proposed rules, to consolidate stream channel protection requirements to enhance and protect fish and wildlife under Sections 102, 201, and 515 of the Act. The basis and purpose of this provision of Section 816.44 are found at the preamble to the corresponding material in Section 816.97.

9. Several commenters were concerned with potential overlap of other State and Federal regulation of stream diversions, especially the Corps of Engineer/Environmental Protection Agency's Section 404 Clean Water Act program. It is true that streams which fall under the 404 program of the Clean Water Act will in some cases also be covered by Section 816.44. However, the Office does not believe that conflict exist between Section 816.44 and requirements applicable under Section 404, Clean Water Act, nor did commenters specify any such conflicts. Rather, the Office views Section 816.44 as an important complement to Section 404 programs, particularly because the Office's regulation is tailored specifically to coal mining.

§ 816.45 Sediment control measures.

This Section of the final regulations includes sediment control measures to be utilized in conjunction with sedimentation ponds as best technology currently available to achieve and maintain the water quality standards of the Act. In addition, implementation of such sediment control measures with proper demonstrations to the regulatory authority in accordance with Section 816.46 can result in reductions of requirements for sediment storage volume and detention time for sedimentation ponds.

Acceptable sediment control practices include: (a) distributing the smallest practicable area at any one time during the mining operation, through progressive backfilling, grading, and prompt revegetation; (b) stabilizing backfill material to promote a reduction in the rate of volume of runoff; (c) retaining sediment within the disturbed area; (d) diverting runoff away from the disturbed area: (e) diverting runoff using protective channels or pipes; (f) using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures to reduce overland flow velocity, reduce runoff volume, or trap sediment; and (g) treating with chemicals. Grim, (1974) pp. 101–114; USEPA, Erosion and Sediment Control, (1976) Vol. 2, pp. 1–51; USEPA, Erosion and Sediment Control (1976) Vol. 1, pp. 1–84.

Authority for this Section is contained in Sections 102, 201(e), 501(b), 503(a) and 515(b) of the Act. The preamble discussion supporting the proposed rule is incorporated herein by reference. 43 Fed. Reg. 41746 (Sept. 18, 1978).

1. Some comments on this Section overlapped comments on Sections 816.42 and 816.46. To this extent, responses to comments on such Sections are incorporated herein by reference. Other comments on this Section are discussed below.

2. One commenter said the use of "appropriate sediment control measures" and "best technology currently available" was redundant, and one or the other should be deleted. "Best technology currently available" is defined in Section 701.5, and is a requirement for the operator to examine a number of methods, recognized as being effective. *See* preamble discussion to Section 701.5. "Appropriate sediment control measures", promotes the implementation of the selected methods.

3. One commenter recommends inserting words to assure that one or several of the sediment control techniques may be used but all are not necessary. The Office has added language to clarify that such additional sediment control measures are necessary to achieve and maintain water quality standards and effluent limitations of the Act.

4. Another commenter said that this Section of the regulations was open-

ended, implying that other measures not listed may be required. To assure flexibility and promote the development of innovative control techniques, the Office has decided to retain the aspect of the regulation which implies that other unlisted sediment control measures can be implemented.

5. Commenters suggested substituting the word "stabilizing" for "shaping" in Section 816.45(b). The rationale for this change was that shaping was only one of several stabilizing techniques used for erosion control. The commenters felt that shaping might be incompatible with the approximate original contour requirement. The Office has decided to adopt this recommendation. Stabilizing by mechanical and vegetative techniques are only two of many methods which can be used to reduce the rate and volume of sediment transport.

6. One commenter said "treating with chemicals" should be reworded to say "utilization of flocculating agents." The Office has decided that the term chemicals is broad enough to include not only organic polyelectrolytes, but could also include such other chemicals as lime or alum that could possibly be used to increase floc size and which may at the same time improve other water quality parameters.

7. One editorial change was made to clarify the intent of the regulation within the context of the law. In Section 816.45(a), "prompt" revegetation was replaced with "timely" revegetation in accordance with Section 816.111(b). The purpose of this change was to stimulate the operator to take swift measures in re-establishing the vegetative cover.

§ 816.46 Sedimentation ponds.

§ 816.46(a)

General requirments. The Office has decided to require sedimentation ponds in conjunction with other sediment control measures as "best technology currently available" to prevent to the extent possible additional contributions of suspended solids to streamflow or runoff outside the permit area and to achieve and maintain applicable effluent limitations.

Sedimentation ponds are structures, including barrier dams or excavated depressions, which slow down water runoff to allow sediment to settle out. To effectively settle particles, sedimentation ponds must provide sufficient storage volume for both sediment and detained water. In addition to providing adequate storage volume, ponds must detain water for a sufficient time to allow sediment to settle out.

It is well established that sedimentation ponds used with other sediment control measures are "state-of-the-art" for controlling sediment movement from surface coal mining operations. The Environmental Protection Agency (EPA) has undertaken a number of studies to determine the best methods for controlling sediment laden flow. EPA studies have concluded that sedimentation ponds are the key to controlling sediment. According to EPA, such ponds are "the most effective structures for trapping sediment." The conventional method for controlling sediment that reaches the periphery of the mining operations is through the construction of a sediment pond to intercept the surface runoff before it leaves the mining site. *Erosion and Sediment Control—Surface Mining in the Eastern United States, at 65 (1976).* Another EPA study indicates sedimentation ponds can be considered as the last opportunity to treat the runoff before the water leaves the mine area. Hill, *Sedimentation Ponds—A Critical Review,* at 2 (Oct. 1976). According to one of the leading commentators in the field, sediment ponds should be located as close to the sediment source as possible and before drainageways reach the main stream. Grim and Hill, *Environmental Protection in Surface Mining of Coal,* EPA-670/2-74-093; at 103 (Oct. 1974).

Also, several states, including West Virginia, Pennsylvania, Kentucky and Montana now require sediment ponds to control sediment from mining operations. Hill, at 13 (1977).

The mechanics of sediment laden flow are complex. The major factors governing the efficiency of a sediment pond are the geometry of the basin, the inflow hydrograph, the inflow sediment graph, the outlet design, the flow pattern within the basin, the characteristics of the sediment and the settling behavior of the suspended sediment particles, the detention time, and, where applicable, control devices within the basin which minimize short-circuiting, turbulence, and resuspension. Ward, *Simulation of the Sedimentology of Sediment Detention Basins at 32 (1977).*

The final sedimentation pond design criteria are supported by Sections 102, 201(c), 501(b), 503 (a) and (b), 515(b)(10), 515(b)(24) and 516 of the Act. See also *Surface Mining Regulation Litigation,* 456 F. Supp. 1301 (D.D.C. 1978).

The Office has considered alternatives analyzed in the regulatory analysis. The rationale for selecting the final regulations in lieu of the alternatives is found in the context of this preamble discussion, the disposition of submitted comments related to the final regulations and the preamble to the proposed regulations for the permanent program.

The final design criteria for sedimentation ponds contain the following key requirements. Sedimentation ponds may be used individually or in series. Especially in mountainous areas, several small ponds may be more desirable than a single large pond because of topographic constraints. Several small ponds may also improve overall detention time. Moreover, one small pond can be used to remove the bulk of the large particles thus reducing the need to clean out a larger polishing pond. Hill, at 14 (1977); *Erosion and Sediment Control* at 54 (1976).

Sedimentation ponds must be constructed prior to any disturbance of the area to be drained into the pond and as near as possible to the area to be disturbed. Grim and Hill at 103 (1974). Generally, such structures should be located out of perennial streams to facilitate the clearing, removal and abandonment of the pond. Further, locating ponds out of perennial streams avoids the potential that flooding will wash away the pond. However, under design conditions, ponds may be constructed in perennial streams without harm to public safety or the environment. Therefore, the final regulations authorize the regulatory authority to approve construction of ponds in perennial streams on a site specific basis to take into account topographic factors. Hill at 11 (1976); *Erosion and Sediment Control* at 54 (1976).

In general, various subsections of the regulations dealing with sedimentation ponds require the operator to demonstrate how elected options will meet design criteria. Several commenters desired clarification as to how this could be accomplished. The operators have the burden of providing adequate assurance or proof that the methods proposed are effective and safe. Such proof can be presented for approval by the regulatory authority in many different forms, and is not specified in any specific format. Except as specified in the regulations, such forms may generally include but are not limited to the following:

a. Maps, graphs, or charts.

b. Valid reports of similar work performed by others.

c. Testimony by recognized professionals, or

d. Actual laboratory experiments, and controlled field plot demonstrations.

The operator has the option of electing the most advantegous method. Final approval is still vested in the regulatory authority.

The following general comments were received on Section 816.46(a).

Commenters requested insertion of words in this section to point out the exemption from the requirement to

construct ponds in order to track Section 816.42. Such insertions as "if necessary," or "as required" were suggested. This issue has been previously addressed in the context of whether sediment ponds are "best technology currently available." Operators will find that sedimentation ponds can be used to their benefit to reduce sediment and achieve effluent limitations. The insertion of the suggested wording might expand the narrow exemption contained in Section 816.42. To avoid any possibility that the exemption would be expanded by this language addition, the Office decided to reject the comment.

Commenters requested clarification of the terminology "disturbance of the disturbed area" as used in the proposed regulations. Disturbance is a progressive process which can be considered as a deviation from a baseline condition. The wording has been clarified to reflect the requirement to construct a pond prior to any disturbance of the existing pre-mining condition.

Commenters suggested allowing construction of sedimentation ponds in intermittent and perennial streams. Because of the physical, topographic, or geographical constraints in steep slope mining areas, the valley floor is often the only possible location for a sediment pond. Since the valleys are steep and quite narrow, dams must be high and must be continuous across the entire valley in order to secure the necessary storage.

There are two other alternatives. One would be to use an area to one side of the stream for the pond. This will not be physically possible in most cases, and if pursued, might cause serious additional disturbance to the environment. Kathuria at 4 (1976).

The other alternative would be to declare the area unsuitable for mining. Each case needs to be judged on its own. The Office recognizes that mining and other forms of construction are presently undertaken in very small perennial streams. Many Soil Conservation Service (SCS) structures are also located in perennial streams. Accordingly, OSM believes these cases require thorough examination. Therefore, the regulations have been modified to permit construction of sedimentation ponds in perennial streams only with approval by the regulatory authority.

One commenter suggested that a new Section should be added for controlling sedimentation from mining on steep slopes and that the new Section should focus on performance standards with no reference to design criteria. The commenter contends that 0.1 acre-foot for each acre of disturbed area within the upstream drainage area is sufficient to control runoff and sedimentation. Also the commenter suggests the design standards would appear to eliminate bench ponds.

The commenter did not submit any data or information such as maps, contours and mine plans and drainage of their sediment ponds to substantiate the comments. Based on this suggestion alone without the submission of data, the office has no reason to believe that performance standards of the Act will be achieved and maintained.

Commenters said sediment ponds could cause degradation and scouring of some stream channels especially in areas prone to arroyo formation. The Office has decided that such downstream erosion can be mitigated. As discussed previously, sediment ponds are necessary to achieve and maintain water quality standards of the Act during surface coal mining and reclamation operations. To avoid downstream erosion or scouring, operators are free to divert streams around surface coal mining activities in accordance with Section 816.44. Moreover, downstream scouring can be minimized by locating the sediment pond out of perennial streams thus assuring that natural sediment loads remain in the stream. In addition, downstream adverse effects can be mitigated by the use of energy dissipators, riprap channels and other devices as required by Section 816.45.

§ 816.46(b) Sediment storage volume.

The final regulations establish two methods for computing required sediment storage volume. First, the operator may utilize the Universal Soil Loss Equation (USLE), gully erosion rates and appropriate sediment delivery ratios to compute sediment yield. This method allows the operator maximum flexibility to account for site specific variations in sediment yield. The preamble to the proposed rules 43 Fed. Reg. 41747 (Sept. 18, 1978) supporting the selection of the USLE is incorporated herein by reference.

Under the second method, operators may utilize a general rule for computing sediment yield from the disturbed area. The operator may assume a sediment yield of .1 acre-foot for each acre of disturbed area. The regulatory authority is authorized to require greater sediment storage volume if necessary. A lesser sediment storage volume to .035 acre-foot for each acre of disturbed area may be authorized if the operator demonstrates that sediment removed by other sediment control measures is equal to the reduction in the pond sediment storage volume. The preamble to the proposed rules supporting this Section is hereby incorporated by reference. 43 Fed. Reg. 41748 (Sept. 18, 1978).

The following comments were received on Section 816.46(b).

Commenters requested technical justification for the option to construct sediment ponds having acumulative sediment volume from the drainage area to the pond for a minimum of three years. Commenters submitted no data to refute the design option. However, commenters said the majority of ponds had an operational life of less than six months. Commenters added that this was not the case with sedimentation ponds serving reclaimed areas, but few of the latter category were required due to consistent attainment of effluent limitations. Again, commenters failed to submit data supporting this assertion.

The final regulations include a three-year minimum sediment storage volume for ponds. Operators may use the USLE to compute required sediment storage volume to capture sediment yield for a minimum three-year period. As an alternative, operators may compute sediment storage volume based upon an initial requirement of 0.1 acre-foot for each acre of disturbed area within the upstream drainage area. These two options offer operators the flexibility to include site-specific variation in design of sediment ponds.

A three-year minimum storage volume is necessary to collect sediment during normal premining, and reclamation operations under the Act. Under prior state laws, the normal life of ponds designed for contour mines was usually from one to three years. For area mines it was usually much longer. Hill at 11 (1977). With the implementation of the Surface Mining Act, surface coal mining and reclamation operations will generally occur over a period much longer than three years. Premining and actual mining will normally occur over more than one year. Further, the pond may not be removed until the disturbed areas has been restored, the vegetation requirements of Section 816.111–816.117 are met, and the drainage meets applicable stream standards. Thus, a three-year minimum storage volume is not an excessive requirement.

In particular, vegetation standards require, as a minimum, vegetative cover capable of stabilizing the soil surface for erosion. Site-specific investigations in the western coal fields have shown that such stabilization may not occur within the first year or two after mining. Gullies formed on revegetated surfaces will often increase sediment yield. Moreover, internal drainage to graded, topsoil and seeded areas is possible. Hardaway and Kimbal, Trip Report at 8, 12, 23 (1976). *See also* Dollhopt et al. 71–73 (1977). This type of extensive erosion after mining requires that sediment

ponds be designed with a minimum sediment storage volume of three years.

Moreover, data collected in Appalachia support a three-year sediment storage volume. According to one study, gullies can form after revegetation causing erosion. Curtis and Superfesky at 157 (1978). In addition, measurements of sediment accumulation in debris basins show highest sediment yield during the first six months following mining, with excess sediment loads occurring within three years following mining. Curtis at 88 (1974). According to this study methods of mining and handling spoil affect sediment yield, and so does the speed with which vegetation is established. The Office considered that this study examined surface mining prior to implementation of the standards of the Act. Compliance with the Act should result in a reduction of sediment yields from surface mined lands. However, sediment yield is not only a function of operating practices, but also of revegetation which is more a function of climate, terrain and soil type. Normally in the east, revegetation will require, at the minimum, six months to stabilize the surface area with vegetation. Curtis at 88 (1974). Naturally in the arid west a considerably longer period will be required for adequate stabilization. Hardaway and Kimball at 8, 12, 23 (1976). All of these factors support a pond design standard which includes a sediment pond with a minimum three-year sediment storage volume.

One commenter wanted to create a larger sediment storage volume to reduce the frequency of sediment cleanout. The intent of this regulation is to specify the minimum sediment storage volume necessary for a well-constructed sediment pond. Accordingly the word "minimum" is added to clarify this point.

The use of the USLE for mined area was questioned by several commenters. They contend that although this method is well established for sheet erosion losses on argiculture land, it may not be truly accurate or useful in other areas. The Office has decided to retain the option to use the USLE to compute sediment storage volume procedures since making the USLE predictions is a well established and accepted practice of the engineering and scientific community. Meyer at 3 (1975); Haan at 5.1 (1978); Wischmeir (1965); USDA, 1975, *Procedure for Computing Sheet and Rill Erosion on Project Areas*, SCS Technical, Release No. 5 (Rev.). The USLE recognizes the effects of the primary environmental and physiographic factors causing erosion, without having to establish site-specific conditions through field measurements of data.

The use of gully erosion rates and sediment delivery ratio factors was questioned by some commenters. The Office has retained these requirements. The USLE considers only soil lost by sheet erosion. Where gullies are active, the eroded material must be accounted for in determining the sediment entering the pond. The SCS Technical Release No. 32 is one reference which gives procedures for determining the rate of gully development. Sediment delivery ratio is defined as $D=Y/A$ where Y is the sediment yield from a watershed and A is the gross erosion occurring on the watershed. Gross erosion is the sum of a sheet and rill erosion, gully erosion, and stream erosion. On active and reclaimed surface mines, sheet and rill erosion are the principal components of A. Haan and Barfield at 221 (1978). The sediment delivery ratio is necessary to account for eroded material which is deposited prior to entering the pond. Haan at 5 (1978); McKensie at 4 (1977).

One commenter questioned whether the regulatory authority should establish methods "for determining sediment storage volume." The Office agrees that this is not the proper role of a regulatory authority. Accordingly, the regulation has been changed by substituting the word "approved" for "established." With this concept, the operator will submit his methods for review and approval by the regulatory authority.

Commenters requested that reference and justification for using the USLE should be discussed. They stated that accumulated sediment volume can be estimated using the USLE or forms thereof. According to commenters, methods using gully erosion rates and sediment delivery ratios, either singly or in combination, which estimate sediment volume are not commonly used for surface mining.

Section 816.46(b)(1) authorizes the use of the USLE, gully erosion rates, and the sediment delivery ratio converted to sediment volume using the sediment density, or other empirical methods derived from regional sediment pond studies to determine the sediment storage volume.

Haan and Barfield (1978), ch. 5, discuss soil erosion and sediment yield similarities between surface mining and agricultural land. The similarities are helpful since agricultural erosion has been studied for many years resulting in the development of procedures for its prediction and control. Soil erosion results when soil is exposed to the erosive powers of rainfall and flowing water. It is not possible to conduct massive earth moving operations necessary for strip mining without exposing soil to these erosive forces. It is possible to use the USLE to plan the surface coal mining and reclamation operations so that sediment production can be reduced. Through the use of properly designed and constructed sediment detention structures containing adequate storage volume the adverse effects of mining on stream water quality can be essentially eliminated. (Haan and Barfield at 5.1 1978).

Commenters questioned the selection of sediment storage volume equal to 0.1 acre-foot for each acre of disturbed area within the upstream drainage area. Other commenters suggested that the 0.1 value be reduced to 0.035. The Office has retained this section of the regulations. This method is provided as an alternative choice to minimize the amount of onsite study for determining adequate sediment storage volume. If the operator utilizes on-site erosion and sediment control measures, such as prompt and progressive backfilling, prompt revegetation, and upstream sediment traps, the regulatory authority may approve a sediment storage volume not less than 0.035 acre-foot for each acre of disturbed area within the upstream drainage area. To obtain the reduction in sediment storage volume, the operator must show the sediment removed by other control methods is equal to the reduction in sediment storage volume. Grim and Hill at 102 (1974). Thus, a sediment storage volume of 0.1 acre-foot per acre of disturbed area is the initial standard which can be adjusted downward to 0.035 upon proper demonstrations by the operator. A sediment storage volume of 0.035 acre-foot for each acre of disturbed area is a nationwide minimum sediment storage volume for sedimentation ponds. Simpson, Westmoreland Resources, comments on the Interim Final Rules, page 1 (March 23, 1978); National Coal Association, Comments, and data on the proposed interim regulatory program, Section 715.17(e)(1), Oct. 1977. Robbins, Comments on the Interim Final Rules, at 16, (March 15, 1978).

Commenters suggested the minimum storage volume for sedimentation ponds was excessive. This volume is composed of storage for the runoff from the 10-year 24-hour precipitation event, and 0.1 acre-foot of storage for each acre of upstream disturbed area. A settling pond must include both a settling volume and a sediment volume to hold inflow for a sufficient period of time to allow sediment to settle and provide storage volume for such sediment. Therefore, a settling volume with a minimum detention time, and a sediment storage volume have been specified. Kathuria at 8 (1975); Grim at 106 (1974); Ward at 2 (June 1978).

Commenters suggested the regulations should require surface area crite-

ria in design of sedimentation ponds, particularly where necessary to meet the effluent limitations. They cite "Physiochemical Processes," by Walter J. Weber, Jr., to support this proposition. This discusses overflow rate, detention period, terminal particles velocity and effective tank depth. This reference discusses "the removal of discrete particles in an ideal settling tank," where inflow, outflow, surface area, and volume are constant values in a steady state process.

The Office agrees that surface area is an important consideration in the design of a sediment pond to achieve and maintain water quality standards. Surface area should be adequate to provide both the required storage capacity and the sediment removal capability to achieve and maintain water quality standards. Kathuria at 87 (1976). The Office believes, however, that established criteria for sediment storage volume and detention time will result in adequate pond surface area to meet water quality standards. This determination is based upon the preamble discussion supporting Section 816.46(b) and (c) which is incorporated herein by reference.

§ 816.46(c) Detention time.

This section of the final regulations requires sediment ponds to be designed, constructed and maintained to detain sediment laden water for a period of time sufficient to allow the water to come to rest and clarify to assure the discharge from the pond meets water quality standards of the Act. The average time design inflow is detained in the pond is the theoretical detention time. Haan at 6.6 (1978). This measure of flow through velocity is an essential design criterion for sedimentation ponds. Haan at 6.6 (1978); Hill at 11 (1976); Kathuria at 8, 56 (1976); Ward at 26 (1978); Janiak, Purification of Waters from Lignite Mines, at 59 (1975); USEPA Erosion and Sediment Control, Vol. 2, 51-79 (1976).

The final regulations establish a 24-hour theoretical detention time as the initial design detention time for sediment ponds. The regulatory authority is authorized to lower the theoretical detention time upon adequate demonstrations by the person who conducts the surface mining activity. In no event may the regulatory authority lower theoretical detention time from 24 hours without a demonstration that water quality standards including effluent limitations will be achieved and maintained. The regulatory authority may require the pond design to include a theoretical detention time above 24 hours to meet water quality standards including effluent limitations. The regulatory scheme recognizes that to achieve the water quality standards of the Act, the operator must consider site-specific conditions such as soil type, particle size, particle specific gravity, slope, moisture conditions and other physical conditions. In addition, the final regulations recognize the importance of pond inflow and outflow design, and pond shape in determining necessary detention time. The preamble to the proposed rule as clarified in the response to comments on this section is incorporated herein be reference. 43 Fed. Reg. 41748, Sept. 18, 1978.

The following comments were received on Section 816.46(c).

Most industry commenters suggested that the use of sedimentation ponds alone will not achieve EPA effluent limitations. Although some industry commenters concede that sediment ponds are the best technology currently available, the same commenters add that even the use of such technology will not achieve EPA effluent limitations. Commenters submitted no independent field data to show that properly designed sediment ponds would not achieve effluent limitations. Rather, commenters challenged the data base, methodology, recommendations and conclusions of the Kathuria study cited in the preamble to the proposed rules, 43 Fed. Reg. 41748, Sept. 18, 1978.

In particular, regarding the initial design criteria of a 24-hour theoretical detention time for the water inflow entering the pond from a 10-year 24-hour precipitation event, commenters suggested that this detention time would not necessarily result in a 94 percent removal efficiency which may be necessary to achieve effluent limitations. Commenters added that when particles in the inflow are less than 20 microns, a sediment pond built to OSM criteria will not settle out particles during high rainfall events. Commenters suggested that pond efficiency was more a function of surface area and inflow sediment concentration and velocity. According to commenters, chemical treatment will probably be a requirement rather than option to meet effluent limitations. Environmental group commenters said sediment ponds were the best technology currently available, but greater detention times and surface area would probably be required to meet effluent limitations.

Sedimentation ponds are the heart of the regulatory scheme. As discussed previously sedimentation ponds are the key to controlling sediment. Nonetheless, as industry commenters point out, sedimentation ponds alone may in some cases be insufficient to achieve and maintain applicable effluent limitations. Therefore, the Office has required the use of additional sediment control measures if necessary to achieve effluent limitations.

In addition to sediment ponds, operators must use, as necessary, straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment to meet effluent limitations. The effectiveness of such sediment control measures is well documented. Grim and Hill at 101-115 (1974), Erosion and Sediment Control 59-72 (1976).

Moreover, disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling and grading, timely revegetation, retaining sediment within disturbed areas, and diverting runoff using protected channels or pipes through disturbed areas will effectively reduce sediment laden flow to sediment ponds thereby decreasing pond maintenance and increasing overall efficiency of sediment control measures employed. Grim and Hill at 101-115 (1974), Erosion and Sediment Control 59-72 (1976).

As commenters have repeatedly said, such sediment control measures will effectively reduce sediment laden flow from surface coal mining and reclamation operations. West Virginia Surface Mining and Reclamation Association, Comments on Interim Rules, Section 715.17(e) at 6 (1977), West Virginia Department of Natural Resources, Comments on Interim Rules, Section 715.17(e) 1 of 2 (1977).

The final design criteria for sedimentation ponds, in conjunction with other sediment control, are intended to achieve the water quality standards of the Act. The sediment pond design criteria requiring inflow detention time are critical to effective performance of sediment ponds. Under the final regulations, a 24-hour theoretical detention time for water inflow or runoff entering the pond from a 10-year 24-hour event is established as the threshold criteria for sediment ponds.

The regulatory authority may require additional detention time if necessary to achieve effluent limitations. Similarly, the regulatory authority may approve a lower detention time to 10 hours, when the person who conducts the surface mining activities can demonstrate that the process will achieve and maintain effluent limitations and is harmless to fish, wildlife and related environmental values.

The detention time requirements are based upon the following technical literature and comments. In 1976, EPA commissioned a study of nine selected sediment ponds in the States of Pennsylvania, West Virginia and Kentucky. Kathuria, Effectiveness of Surface Mine Sedimentation Ponds (1976).

The conclusions and recommendations of this study demonstrate the need for and timelines of the final design criteria for sediment ponds. According to the study, construction of ponds not in accordance with approved plans and specifications and poor subsequent maintenance of the ponds were the two major factors contributing to their poor performance. Moreover, the investigators found that timely removal and disposal of accumulated sediment, cleaning of clogged outflow pipes, repair of emergency spillways and embankment repair are extremely important for the proper functioning of sediment ponds and are usually overlooked. Kathuria at 3 (1976). Thus, the final regulation for sediment ponds are essential to assure that sediment ponds are properly designed, constructed and maintained to achieve the water quality goals of the Act.

The study identified three ponds which achieved EPA effluent limitations during both baseline (non-storm conditions) and storm conditions. Kathuria at 47, 48 (1976). Based upon these and other collected data which show that removal efficiency is a function of detention time, the study recommended that sediment ponds be designated and constructed with at least a 10-hour actual detention time. Kathuria at 8, 56 (1976).

Studies of actual pond detention time versus theoretical detention time have shown actual detention time to be 30 to 70 percent of theoretical detention time with most ponds falling into the lower category. Hill at 11 (1976). Assuming ponds are approximately 50 percent efficient, to achieve an actual detention time of 10 hours, as recommended by Kathuria, ponds should be designed with a theoretical detention time of approximately 20 hours. According to data collected by Kathuria, the pond will have a removal efficiency of 90 percent with this detention time. Accordingly to a simulation model run by Ward, removal efficiencies greater than 90 percent may be required if water quality standards are to be achieved. Ward at 30 (1978). Since according to Kathuria data, removal efficiency begins to level off at approximately 24 hours theoretical detention time because of the additional time required to settle particles less than 20 microns, the Office has decided to establish a 24-hour theoretical detention time as the initial design standard for sediment ponds.

Regarding industry's contention that when even small amounts of incoming sediment are less than 10 or 20 microns in size, effluent limitations will not be achieved, the Office emphasizes that three of the nine ponds tested by Kathuria met effluent limitations during baseline and rainfall events with inflow containing sediment in the 10 to 20 micron particle size range. Kathuria at 89–100 (1976).

In addition, using Stoke's Law, which is an idealized formulation recognized as basic to all settling theory, a 20-micron particle would settle at a rate of approximately 2.4 ft/hr at 10 degree C, therefore falling 57 feet in a 24-hour period. A 10-micron particle under the same conditions settles at approximately 0.6 ft/hr. falling 14.4 feet in 24 hours.

Of course, short-circuiting and eddy currents make the real world situation different from the ideal situation expressed by the Stoke's Law approach. Assuming the pond to be approximately 50 percent efficient, the average actual detention time (as opposed to the theoretical 24-hour detention time) would be 12 hours. Twelve actual hours detention time should be ample to remove the 20-micron particles and most of the 10-micron particles. For the majority of the runoff events, the detention time achieved will be significantly higher than 24 hours, thus offering additional removal capability. The Office believes, therefore, that sediment ponds will generally be effective in removing particles 10 microns and larger.

To the extent that inflow volume or sediment concentration become factors in failing to achieve water quality standards, operators should consider locating ponds out of perennial streams and utilize measures to control the inflow rate to sediment ponds. For example, Kathuria found that Pond 2 which met effluent limitations had the benefit of initial settling of inflow in a pit area. The surge effect from a rainfall event was reduced by controlled pumping of influent to the pond. Pond 6 also had a portion of the inflow pumped from the mining pit area to the sediment pond. Kathuria at 22, 31–34 (1976). Other measures can also be applied to reduce the surge effect of a rainfall event. Erosion and Sediment Control 59–72 (1976), Grim and Hill 101–115 (1974), Hill at 14 (1976).

With the proper design construction and maintenance of sediment control measures including sediment ponds, the Office believes that water quality standards of the Act can be met. To the extent that particle size distribution precludes attainment of water quality standards even with application of these sediment control measures, the operator must use flocculants to achieve water quality standards. Hill at 6 (1976).

The Office emphasizes that Congress was well aware that best technology for sediment control could necessarily include the use of flocculants. In discussing best technology currently available, the House Committee on Insular Affairs stated:

> One example of the best available technology for sediment control, which is applicable throughout the United States and can be used on a mine-by-mine or a multiple-mine basis, is that technology employed at the surface coal mine of the Washington Irrigation and Development Company. This mine is located in the Hanaford Creek drainage, south of Centralia, Washington. The general geographic characteristics of this area are common to other coal areas. . . . In this instance, in order to meet year-round water quality standards for migrating fish, the company designed a relatively inexpensive method of settling virtually all of the sediment in the surface runoff from the mining operation. Several sets of double siltation entrapment ponds were constructed on the small tributaries leaving the mine property. Elimination of sediment loads is achieved through a two-stage process, with the initial gravity settling occurring in the first pond and the introduction of a biologically inert flocculating compound into the flow between ponds. This results in a discharge that contains even less silt than the normal background flow. . . . H. Rept. 95–218, 114, 115 (1977).

Thus, Congress clearly contemplated the use of flocculants to achieve water quality standards. Further, Congress intended that such innovative technology should be transferred to other coal fields. In this regard, the Committee added:

> This technology sets a standard for the industry and is representative of the innovation the mining industry can achieve when required to meet specific water standards as a precondition to operation. It should be noted that this approach is applicable not only in area-type mining situations but also in the mountain mining operations in the Appalachian coal fields, where such facilities might serve more than one specific mine site in a small drainage area. H. Rept. 95–218, 115 (1977).

Moreover, the Committee was well aware that control costs would increase with the use of flocculants. Nonetheless, the Committee stressed that achieving water quality standards must be the guiding principle under the Act. To remove any doubt with respect to whether water quality standards should yield to cost considerations, the Committee said:

> The bill requires that the standard for siltation control should be the best available technology in recognition that the application of such technology might well increase present siltation control costs of some mine operations. However, the Committee rejected the notion that the standards should be adjusted to what individual mine operators state they can or cannot afford. The Committee's action requires the adjustment of operation to the environmental protection standards rather than the opposite. With this approach, the Committee believes that operators will find the right combination of techniques to meet the siltation on the most cost-effective basis. H. Rept. 95–218, 115 (117).

Thus, Congress intended that operators use flocculants if necessary to achieve and maintain water quality standards.

Congress' belief that flocculants are available to effectively control sediment in the submicron size range is buttressed by testimony on flocculants received during public hearing on the proposed rules. During hearings in Charleston, West Virginia, a vendor of such chemical agents testified to their effectiveness in facilitating the capture of submicron size sediment. Public Hearing 450–459 (Oct. 26, 1978). Therefore, the Office has included flocculants as best technology currently available if necessary to achieve and maintain water quality standards.

Commenters suggested that the term detention time be more precisely defined in the regulations. Theoretical detention time is determined by a flood routing procedure for the design event. Haan, at 2.91, 4, 8, and 4.17, 6.6 (1978). The routing procedure balances the design release rate and the available storage (settling storage). The balance achieved assures that water will be released rapidly enough to prevent overtopping the dam, and that it will be released slowly enough to allow proper settling for the design event. Soil Conservation Service National Engineering Handbook Chapter 15 and 17 (1971). As the release rate is decreased, the amount of storage is increased and the outflow hydrograph is lengthened (because the settling storage is released over a greater length of time). The net effect of a smaller release rate is greater distance between the centroids of the inflow and outflow hydrographs, thus, giving a larger theoretical detention time. The determination of the centroid (of the outflow hydrograph) is an analytical procedure discussed in Haan and Barfield, at 6.6 (1978).

Commenters questioned the selection of a 10-year 24-hour precipitation event as the design criterion for a sediment pond.

The selection of a 10-year 24-hour precipitation event as the inflow design criterion for sediment ponds is based upon Section 515(b)(10)(B) (i) of the Act which requires the Office to assure that additional contributions of stream flow do not exceed applicable Federal law. Under the Clean Water Act, EPA effluent limitations are applicable to coal mining operations, 40 CFR Section 434. According to EPA regulations, treatment facilities to meet such effluent limitations should be constructed to include the volume which would result from a 10-year 24-hour precipitation event. *See also* Grim at 241 (1974). To assure a uniform regulatory scheme and enable the regulatory authority to measure compliance with both EPA effluent limitations and OSM standards, the Office has decided that sediment ponds should be designed to control a 10-year 24-hour precipitation event. This should also reduce the regulatory burden on the operator by eliminating confusion between EPA regulations and OSM regulations.

Commenters questioned the requirement that chemical treatment processes be designed by a professional engineer. Commenters specifically questioned the ability of even a few professional engineers to properly design chemical treatment processes. They also noted that EPA does not require that a professional engineer design treatment processes. This Office also determined that designing processes for chemical treatment of water will require special expertise. Accordingly, the Office removed the restriction, thus permitting the operator to use the services of any qualified persons.

Commenters questioned whether qualified operators approved by the regulatory authority should operate chemical treatment processes. Commenters said that approval by the regulatory authority was not necessary. Other commenters were concerned about apparent conflict with recent UMW wage contract agreements. Other commenters said OSM was without statutory authority to require certification of waste-water treatment operators.

The Office has decided to delete the requirement for a qualified person approved by the regulatory authority to operate a treatment process. This additional flexibility should avoid any conflicts with UMW wage contract agreements. It is emphasized, however, that operators have the burden of achieving and maintaining effluent limitations. The operator is therefore responsible for selecting a qualified person to operate a chemical treatment process to meet such limitations.

A few commenters suggested removal of "chemical" in reference to treatment processes. Commenters said that inclusion of "chemical" in the regulations would decrease development of alternative methods, because the term "chemical" excluded other methods which were mechanical, or electrical.

The Office has retained this terminology. Alternative sediment control measures are permitted under Section 816.45 and 816.46. Chemical treatment which may include flocculants is an option chosen by the operator if approved by the regulatory authority. Chemicals used as flocculants include both organic and inorganic compounds that effectively cause the coalescing of individual particles and their resulting increased rate of settling.

§ 816.46(d) Dewatering.

This Section of the final regulations requires a non-clogging dewatering device (which can be a principal spillway) to achieve and maintain the required theoretical detention time. The dewatering device and the principal spillway are required to pass the runoff resulting from a 10-year 24-hour precipitation event without use of the emergency spillway. If the design flow passes through the emergency spillways, there is no practical way to detain it. Thus, the detention time would be inadequate. For this reason, flow through the emergency spillway is restricted to precipitation events exceeding the 10-year 24-hour event. Erosion and Sediment Control-Surface Mining in the Eastern United States, Vol. 2 at 55–80 (1976); Hill at 17 (1976); Haan, at 6.1–6.27 (1978).

The sediment pond dewatering device may be designed in a number of ways. One method is to place the inlet of the principal spillway (usually a pipe spillway) at the elevation of the required sediment storage. A second method would be to place the inlet of the principal spillway at an elevation above the required sediment storage elevation. If this latter alternative is selected, sediment cleanout would not be necessary when sediment accumulate to 60 percent of the required sediment volume. However, the reduction in settling storage must not reduce the actual detention time below the theoretical detention time.

§ 816.46(e) Short-circuiting.

This section of the final regulations requires each person who conducts surface mining activities to design, construct and maintain sedimentation ponds to prevent short-circuiting to the extent possible. Short-circuiting is defined as a process which transports sediment through a pond in less than the detention time required for sediment to settle out. Short-circuiting can be caused by improper pond construction, high velocity jet action of incoming water, wave action and inlet and outlet design. Hill at 10 (1976); Kathuria at 84 (1976).

Methods of preventing short-circuiting include baffles, partitioning the pond into chambers, maintaining a length to width ratio of five to one, constructing an energy dissipator at the pond entrance, modifying the inlow, or adding two or more basins in series. Erosion and Sediment Control—Surface Mining in the Eastern United States, at 68 (1976). *See also* Ward, at 57 (1977); Janiak, at 59 (1975); Kathuria at 58 (1976).

Commenters said it is impossible to "prevent" short-circuiting. Therefore the regulations should require only that operators "minimize" short-circuiting.

To accommodate this concern while at the same time assure an enforceable standard, the Office has modified the language of the regulation to require that operators prevent short-circuiting to the extent possible. Thus, the burden is on the operator to show that all available methods have been utilized to prevent short-circuiting.

§ 816.46(f) Effluent limitations.

This section of the final regulations provides that the design, construction and maintenance of sedimentation ponds or other control measures will not relieve the person from compliance with applicable effluent limitations contained in 30 CFR 816.42. The additional design flexibility provided to operators is thus coupled with the responsibility to achieve and maintain water quality standards. This minimum requirement is mandated by Section 515(b)(10)(B)(i) of the Act which provides that in no event may this Office authorize the discharge of suspended solids in excess of requirements set by applicable state or Federal law. *See also* 121 Cong. Rec. 6201 (1975).

Commenters suggested that operators should be relieved from compliance with effluent limitations if the design criteria for sedimentation ponds were met. Many of the same commenters said there should be minimal or no design criteria for sedimentation ponds.

As stated previously the Office is without authority to relieve operators from compliance with Section 515(b)(10)(B)(L) of the Act. Further, as a result of extensive industry comment, considerable flexibility has been added to the final regulations. For example, pond detention times and sediment storage volume may be lowered upon proper demonstration. In addition, no surface area requirements are included in the design criteria. These modifications have been made because industry has said it should have the flexibility to use alternative means to meet effluent limitations. With this additional flexibility, operators and their engineers will need a guiding limitation to properly design, construct and maintain sediment ponds. Moreover, the Office must be assured that the measures approved by the regulatory authority are effectively controlling the discharge of suspended solids. The effluent limitations provide this essential standard to measure the effectiveness of the sediment control system.

§ 816.46(g) and (i) Principal and emergency spillway.

The final regulations require the design, construction and maintenance of principal and emergency spillways to safely pass a 25-year, 24-hour precipitation event or larger event specified by the regulatory authority. As provided in Section 816.46(d), the principal spillway must dewater the sediment pond at a rate to achieve and maintain the required detention time during a 10-year, 24-hour precipitation event. To assure that the emergency spillway is used only for precipitation events exceeding a 10-year, 24-hour event, the final regulations prohibit any discharge through the emergency spillway during the passage of runoff resulting from such an event and lesser events. The minimum capacity of the emergency spillway should be that required to pass the runoff from a 25-year, 24-hour event less any reduction due to flow in the principal spillway. Erosion and Sediment Control, Vol. 2, 50-69 (1976); Haan, 6.26-6.27 (1978); SCS, Pond 278-313 (1977).

Commenters questioned whether the regulatory authority should specify spillway grades and water velocities. These commenters said that the regulatory authority should assume liability in case of failure. In consideration of these comments, the final regulations permit the operator to select spillway grades and velocities with final approval resting with the regulatory authority. The purpose of the grade and velocity requirements is to provide protection against downstream scouring by released water. This modification recognizes that the operator has the responsibility to design a safe sediment control system and bears liability in the event of failure.

Commenters questioned whether only events greater than the 10-year, 24-hour magnitude were permitted to pass over the emergency spillway. Some commenters interpreted the proposed regulations to allow a "lesser precipitation event" to pass throught the emeregency spillway. The intent at the final regulation is to provide for the detention of any and all events less than or equal to the 10-year, 24-hour event, for the required time period. For example, the emergency spillway may not be located at an elevation where the 5-year, 24-hour precipitation event might be discharged through the spillway. Such action would short-circuit the detention time for the runoff volume of the 10-year, 24-hour precipitation event. Grim at 241 (1974); Erosion and Sediment Control as 65 (1976); Hann at 6.27 (1978).

§ 816.46(h) Sediment removal.

This section of the final regulations provides for the timely maintenace of sediment ponds. A properly designed sediment pond poorly maintained will not achieve water quality standards. Kathuria at 3, 47, 48 (1976). To assure that the sediment pond contains adequate unoccupied sediment volume, sediment must be removed from sediment ponds when the volume of sediment accumulates to 60 percent of the design sediment storage volume. The regulatory authority is authorized to allow sediment removal when the permanent sediment storage is decreased to 40 percent of the total sediment storage volume if additional sediment storage volume is provided above that required for the design sediment storage and theoretical detention time is maintained.

These requirements are necessary to assure that the pond has adequate sediment storage as a reserve for future precipitation events inasmuch as runoff events are not entirely predictable. Additionally, the remaining water volume (40 percent of required sediment volume) reduce the velocity of inflows and allows for resuspension of previously settled sediment. When resuspension occurs, the concentration of suspended solids exceed the concentration of the inflow to the pond. Erosion and Sediment Control—Surface Mining, the Eastern United States Vol. 2 at 53 (1976); Hill at 11, 13, 14 (1976); Kathuria, Effectiveness of Surface Mine Sedimentation Ponds, EPA-600/2-76—17 at 3 (1976); Haan at 6.1-6.27 (1978).

Commenters questioned sediment removal requirements. Some commenters want to utilise 100 percent of the storage volume for sediment prior to cleanout while others suggested 70, 80 or another percentage without technical justification.

The Office has decided to retain the sediment removal requirements. Timely removal and disposal of accumulated sediment is extremely important for the proper functioning of a sedimentation pond. This maintenance is too often overlooked. Kathuria at 3, 25, 28, 31 (1976). Actual operational experience show that some sediment ponds fill up with sediment after only one moderate storm. Grim at 106 (1974).

A number of studies have recommended criteria for timely removal of sediment from ponds. One commentator said ponds should be cleaned when storage capacity is reduced to 40 to 50 percent of design capacity. Hill at 11 (1976). Another commentator recommends that ponds should require maintenance when 60 percent full. Grim at 106 *See also* Erosion and Sediment Control, Vol 2 at 53 (1976). Based upon those studies and to assure effective maintenance of sedimentation ponds, the Office has decided to require removal when sediment accumulation reaches 60 percent.

Commenters requested guidance on the proper disposal of sediment removed from ponds.

Normally, sediment is fine-grained material which has a high water content, and is difficult to handle. After

being removed from the pond, sediments are usually placed in a sump or buried during spoil replacement.

§ 816.46(j) Freeboard.

This section of the final regulations requires a one-foot freeboard above the water surface in the pond with the emergency spillway flowing at design depth. The purpose of freeboard is the protection of the embankment against overtopping created by wave action. U.S.D.A. Technical Release No. 60, "Earthdams and Reservoirs," Erosion and Sediment Control, Vol. 2 at 65 (1976); SCS (No.) Pond 378-2 (1977); Grim at 241 (1974).

Commenters suggested deleting the freeboard requirements. They said freeboard requirements are specified by MSHA for large ponds, and should not be included in these regulations. Commenters did not provide any information on other methods to prevent overtopping created by wave action. Therefore, the comment was rejected.

§ 816.46(k) Embankment settlement.

This section of the final regulations requires the construction height of the dam to be increased a minimum of five percent over the design height to allow for settlement. The regulatory authority may authorize an exemption from this requirement if it has been demonstrated that the material used and the design will ensure against all settlement. Erosion and Sediment Control at 69 (1976); SCS (No.) Pond 378-2 (1977).

Commenters suggested deletion of Section 816.46(k). The commenters stated that section 816.46(j) and Section 816.46(p) effectively considered the intent of this section by using the term "settled embankment." Other commenters suggest that the requirement apply only to the embankment in the immediate vicinity of the emergency spillway. Because settlement of an earth embankment is uncertain, an overage is included for safety. The value of five percent may still be insufficient if the construction methods will not meet the criteria specified for compaction. Soil Conservation Services Practice Standards 378-Pond at 378-2 and 378-7; USDI Bureau of Reclamation at 202 (1960). In such cases the designer should make the appropriate design allowances. The retention of this section is necessary to protect against failure of embankments.

§ 816.46(l) Minimum top width.

This section of the final regulations establishes a minimum top width for embankments.

One commenter suggested a narrower width, to avoid the possibility that traffic would use the embankment for a roadway.

Pond design criteria established by the Soil Conservation Service Standard Practice 378 were followed as minimum requirements. The embankment is to provide additional mass for embankment stability. U.S.D.A., Technical Release No. 60, "Earth Dams and Reservoirs," p. 5.1, 5.5 (1976); SCS (No.) Pond 378-3 (1977).

§ 816.46(m) Embankment side slopes.

To assure embankment stability, this Section of the final regulations requires the combined upstream and downstream side slopes of the settlement embankment to be not less than 1v:5h with neither steeper than 1v:2h. SCS (No.) Pond 378-2 (1977).

Commenters suggested deletion of side slope criteria as specified 816.46(m). They suggest that an overall safety factor should control side slope gradient. While the embankment stability analysis may allow slopes steeper than 1v:2h, the procedure requires an intensive geologic investigation and testing. The side slope criteria specified for small ponds is standard for most small dams and has proven adequate. The Office considers this alternative design a sounder approach, as many designers do not have the facilities to perform complex investigations. This slope criteria also provides additional protection against erosion due to impacting rain and runoff. Moreover, the slope is not so steep as to impede good surface stabilization by vegetation.

§ 816.46(n) Embankment foundation.

This Section of the final regulations requires the embankment foundation to be cleared of all organic matter with surfaces sloped to no steeper than 1v:1h and the entire foundation surface scarified. SCS (No.) Pond 378-1, 7 (1977); Erosion and Sediment Control, Vol. 2 at 69 (1976).

Commenters suggested deletion of the 1v:1h slope criteria between the foundation and the embankment materials, because such requirements will result in occupation of excessive areas by the foundation. The Office has retained this section of the regulations. The basic concept for this specification is to ensure an adequate seal between the excavated slope of the foundation and the embankment materials, both on the bottom and the side slopes. Steeper slope criteria could result in additional shear at this important junction. The requirement is retained to ensure the creation of an adequate and safe junction of these two materials. SCS (No.) Pond 378-2 (1977).

§ 816.46(o) and (p) Fill material.

These Sections of the final regulations require fill material to be free of sod, large roots, and other large vegetative matter, and frozen soil, and in no case may coal processing waste be used. The placing and spreading of fill material must be started at the lowest point of the foundation. The fill must be brought up in horizontal layers of such thickness as is required to facilitate compaction and meet the design requirements of the regulation. SCS (No.) Pond 378-7 (1977); Erosion and Sediment Control, Vol. 2 at 69 (1976).

Commenters requested permission to use coal processing wastes as a fill material in embankment construction. The commenters said coal processing waste could serve as a supplement to embankment materials in areas where soil and rock material were limited. The use of the waste would also allow a desirable use for these products.

Coal processing waste may not be used to construct embankments. Several problems are involved in using coal processing wastes. *See* the preamble discussion under coal waste embankments. (Section 816.81-88) and disposal of excess spoil (Section 816.71-74). Due to the difficulty in obtaining the required compaction, thin lift thickness is usually required. Other problems are the potential for spontaneous combustion resulting from the inflammable nature of the waste and the potential for acid and toxic forming material within the waste. For these reasons, coal processing waste was not included in the list of approved construction materials. *See* also McKenzie, at 3, 4 (1976).

Commenters said authorizing the regulatory authority to specific lift thickness and compaction requirements was beyond the scope of the Act.

Section 515(b)(10)(B)(ii) of the Act provides that sedimentation ponds must be constructed as designed and approved in the reclamation plan. This provision of the Act is intended to assure that the regulatory authority has the authority to require the design of sediment ponds to meet the requirements of the Act. Moreover, Section 510(a) authorizes the regulatory authority to grant, require modification of or deny plans to construct sediment ponds. The Office therefore believes the Act authorizes the regulatory authority to specify lift thickness and compaction requirements for sediment ponds. Such measure are essential for erosion control and stability. SCS (No.) Pond 378-7 (1977).

§ 816.46(q) Embankments greater than 20 feet in height.

This section of the regulations establishes more stringent design standards if the pond embankment is more than 20 feet in height or has a storage volume of 20 acre-feet or more. Under either of these conditions, the combination of principal and emergency

spillways must safely discharge the runoff from a 100-year, 24 hour precipitation event or larger event as specified by the regulatory authority.

The embankment must also be designed with a static safety factor of at least 1.5 or higher safety factor as determined by the regulatory authority. Further, appropriate barriers must be provided to control seepage along conduits that extend through the embankment. Finally, the criteria of the Mine Safety and Health Administration as published in 30 CFR 77.216 must be met. SCS (No.) Pond 378–2–3 (1976); Erosion and Sediment Control, Vol. 2 at 59–69 (1976); SCS Technical Release No. 60, at 5.1 and 5.4. See also preamble discussion to Section 816.72 incorporated herein by reference.

Commenters questioned the need for additional design criteria for large dams.

The general design criteria for principal and emergency spillways, and embankments are drawn from technical literature which distinguishes between large and small sediment ponds. SCS (No.) Pond 378 (1977); Grim at 239 (1974).

To prevent more extensive damage to public health and safety and the environment resulting from a failure of a dam capable of releasing a large volume of water, the Office has decided to impose additional safety requirements for such structures.

§ 816.46(r) Engineering.

This Section of the final regulations requires each pond to be designed and inspected during construction under the supervision of and certified after construction by a registered engineer. This requirement is mandated by Section 515(b)(10) of the Act to assure the proper design and construction of ponds.

A commenter suggested that the pond might be inspected and certified by a qualified person, other than a professional engineer. Another commenter suggested that the regulations include a list of individual items to be inspected and certified. Such areas would include concept, design, construction activities, and inspection certification.

Sedimentation ponds are the key sediment control structures required in the final regulations. In the past many sediment ponds have been poorly designed and constructed. Sometimes ponds were adequately designed but not constructed in accordance with approved plans. This has caused severe erosion and downstream damage, as well as the failure to meet water quality standards. Kathuria at 3, 47, 48 (1976).

Congress was well aware of the importance of the proper design and construction of sediment ponds. To assure that water quality standards were met by surface coal mining and reclamation operations, Congress explicitly required sediment ponds to be certified by a qualified engineer. To implement this congressional directive, the Office has required that each sedimentation pond must be designed and inspected during construction under the supervision of a registered engineer. The operator must have proof of such engineering supervision.

Further, after construction is completed, a registered engineer must certify the sediment pond as conforming to the approved design requirements.

§ 816.46(s) Stabilization of embankment.

This Section of the final regulations requires the entire embankment including surrounding areas disturbed by construction to be stabilized with a vegetative cover or other means. Erosion and Sediment Control, Vol. 2 at 71 (1976); SCS (No.) Pond 378–8 (1977).

After removal of the sediment pond, the area must be regraded and revegetated in accordance with Sections 816.100, 816.105 and 816.111–816.117 unless the pond is approved for postmining land use. In this event, the pond must comply with the requirements for permanent impoundments in Section 816.49 and 816.56.

Commenters suggested modifications to 816.46(s) concerning stabilization of the embankment. One commenter suggested that graded be replaced with "stabilized." The Office found this suggestion acceptable because it permits the operator to employ methods other than grading alone. This intent was previously mentioned in the preamble to 816.45(b). The Office believes that temporary vegetation should be used initially, until the permanent vegetation can be established. Permanent vegetation for sedimentation ponds should include the sod-forming grasses and should exclude woody plants.

§ 816.46(t) Inspections.

This Section of the final regulations requires all ponds to be examined for structural weakness, erosion and other hazardous conditions in accordance with 30 CFR 77.216–3. With approval of the regulatory authority, dams not meeting the criteria of 30 CFR 77.216–3 must be examined at least four times per year.

Commenters were opposed to weekly inspections for all ponds including those not meeting the size or other criteria in accordance with MSHA requirements 30 CFR 77.216B. According to commenters the small size and brief duration of these impoundments make weekly examinations for structural weakness, erosion, and other hazardous conditions unnecessary.

The Office has decided to modify this Section to allow for inspections on a less frequent basis. Since the ponds are small and have been designed and constructed according to Section 816.46, weekly inspection and subsequent reporting required under MSHA for large impoundments might have no significant value.

§ 816.46(u) Removal of sedimentation ponds.

This Section of the final regulations provides that no pond may be removed until the disturbed area has been restored and the vegetative requirements of Section 816.111–816.117 are met. Additionally, the drainage entering the pond must meet applicable State and Federal water quality requirements for receiving streams.

Commenters questioned when ponds might be removed. Some commenters read the proposed regulations to prohibit sediment pond removal until such time as pond influents met effluent limitations. As discussed more fully in the preamble to Section 816.42 which is incorporated herein by reference, sediment ponds may be removed after revegetation requirements have been met and after pond influent meets applicable State and Federal water quality requirements for receiving streams.

One commenter said bonds should be retained as protection against operator abandonment of a sedimentation ponds.

The Office believes there is sufficient control within the regulation for the regulatory authority to approve any changes or amendments pertaining to long term control.

Another commenter requested that the landowner should have a role in determining the postmining use of the sedimentation pond. The Office interprets this comment to apply to cases where the landowner is not the operator. Such decisions would have to be mutually agreed upon by the two parties and in accordance with approved postmining land uses.

§ 816.47 Hydrologic balance: Discharge structures.

(1) Authority for this Section is found in Sections 102; 201; 501, 503; 504; 515(b)(2), (3), (4), (10), (17), (18), (21), (23) and (24) of the Act.

(2) The requirements of Section 816.47 are intended to minimize erosion from mining operations by requiring control of water runoffs which have high velocities and can scour unprotected channels of receiving streams and cause uncontrolled erosion. Scouring can destroy the aquatic, biotic communities of the receiving stream in the immediate discharge area as a result of physical factors, such as trauma, displacement and de-

struction of habitat, and it can adversely impact water quality and ecology for large distances downstream as a result of excessive suspended material. (See the discussion in the Final EIS at Part III-B) Most biological effects of suspended materials are also physical in character, including asphyxiation by the mechanical blockage of respiration, inhibition of photosynthesis by the obstruction of sunlight, and the irritation of gills, which may render the affected organisms more readily susceptible to infections. Hyne, H.B.N., 1970, pp. 443-450; and Wilber, C.G., 1969, p. 261. The regulations identify devices generally applicable for dissipating water energy and preventing scour. Flexibility is provided for use of any acceptable method or combination of methods that will preclude channel deeping or enlargement.

(3) Several commenters suggested that the reference to surge ponds be omitted as a means to control discharges from sedimentation ponds. Some of these commenters also suggested that the phrase "where necessary" be moved to follow immediately after the word "controlled." The commenters considered surge ponds to be generally associated with large reservoirs and suggested that discharge control might not be necessary in all cases. Alternatives considered for developing the final rules were: (1) to leave rules as proposed, (2) delete the reference to "surge ponds", (3) move the words "where necessary", or, (4) incorporate both of the suggestions in (3) and (4). The second alternative was adopted and the reference to surge ponds was deleted since they are just another form of an energy dissipator and therefore, already included in the listed discharge controls. In addition, a comma was added before the phrase "where necessary" to clarify that the intent of the regulations is not to require discharge control in all cases but to limit the need for the specific measures and devices to instances where they are necessary.

(4) OSM has further clarified the scope of this provision from proposed Section 816.47 by adding the words "permanent and temporary impoundments, coal processing waste dams and embankments" after the word "ponds." This change is based on provisions of the proposed rules which provided that all these structures be designed and operated in a manner which minimized erosion, adverse affects on fish and wildlife and disturbance of the hydrologic balance (see for example, Sections 816.41(a), 816.49, 816.81-816.93(c), and 816.97). The addition of specific mention in Section 816.47 of impoundmnets and waste dams emphasizes that discharge measures are appropriate means to help achieve the goals of other regulations specifically applicable to these structures.

§ 816.48 Hydrologic balance: Acid-forming and toxic-forming spoil.

Authority for this Section is found in Sections 102; 201; 501(b); 503; 504; 508(a)(13); and 515(b)(2)-(5), (9)-(11), (14), (16), (17), (19) and (21)-(24) of the Act. Section 816.48 identifies measures for avoiding acid or other toxic mine drainage which might result in degradation of the water quality and ecology of receiving streams (Kinney, 1964; Warner, 1973; Turner, 1958; Striffler, 1973). Biological effects may be acute or chronic in nature, depending upon the type and concentration of toxic pollutants contained in the drainage, the biological species exposed to the pollutants, and the time of exposure.

The methods specified in Section 816.48 are broad in character and cover the practical options known for avoiding acid or other toxic mine drainage. These are supported by the technical literature and State regulations that predate the Act:

Alabama: Act 1260, Sec. 4(i), 1971; Regulations of June, 1974, Secs. 6(c), 7.

Illinois: Act 78-1295, July 1975; Regulations of Feb. 1976, Chapter XI, Rule 1106, 1107, Chapter XIII, Rule 1301, 1302.

Louisiana: LRS, Title 30, Secs. 901, 914 (no date); Regulations of Jan. 1978, Rule 10(b-c), 10(f-la,b,c).

Maryland: ACM, Article 66e, 1967; Regulations of Oct. 1973, Rule 08.06.07.

Montana: RCM, Title 50, Chapter 10, 1947; Regulations of (no date), Rule 26-2.10(10)-S10310, 1(b-c).

Ohio: ORC, Chapter 1514, Secs. 1513.01-1514.02 (no date); Regulations of Sept. 1977, Rule 1501:13-11-05.

Tennessee: TCA, Secs. 58-1540—58-1564, May 1974; Regulations of Dec. 1975, rule 0400-3-7-.03, 1(b).

Texas: RCST, Article 5920-10 (no date); Regulations of Feb. 1976, Rule 051.07.03.251(x).

Virginia: CV, Chapter 17, Title 45.1, 1950; Regulations of July 1972, Chapter II, Sec. 4, C(1,2).

West Virginia: CWV, Article 6, Chapter 20, 1971; Regulations of March 1972, Rule 8D.01(c).

1. Several commenters questioned the provision of Section 816.48(c) which requires that acid- and toxic-forming spoil be placed on impermeable material. The alternative suggested would be to change the last sentence of Section 816.48(c) by deleting "on impermeable material" and substituting "in such a manner as to be." These commenters felt that the primary concerns in handling spoil are water quality, air quality and safety. Further, that material properly compacted as required will be protected from erosion and contact with surface water and will not further oxidize or otherwise deteriorate. Thus, they felt that placing spoil on impermeable material is unnecessary.

The Office did not accept these suggestions. Compaction alone may not be sufficient to prevent acid or toxic waters from slowly seeping through material and making contact with surface or ground water. It is necessary to prevent contamination of these waters, and thus the use of impermeable material is imperative to prevent seepage. (Gasper, 1976, p. 2; Gasper, 1978, pp. 2-4.)

2. A commenter questioned Sections 816.48(a) and (c) as to the appropriateness of relying upon treatment of acid- or toxic-forming spoil as an acceptible independent alternative to spoil burial because of doubts concerning whether the reliability of permanent spoil treatment, under average site conditions, has been sufficiently proven. The Office's review of this matter indicates that the commenter's doubts, on the basis of work on this subject to date, may have some validity. However, use of treatment methodologies is believed to represent a potentially viable alternative in certain situations for destroying the toxicity of spoils. The critical fact which is believed to resolve the issue is that, in Section 515(b)(14) of the Act, Congress clearly permitted either spoil treatment or burial as acceptable disposal methods for preventing water-quality contamination. Furthermore, an absolute ban on use of spoil treatment would preclude development of acceptable treatment methodologies.

Therefore, the Office decided not to exclude the provision allowing for treatment of spoil as an alternative to burial. Of course, the regulatory authority will allow for use of treatment only where the operator can demonstrate that the particular treatment methodology involved will preclude water pollution. (See Sections 102 and 515(b)(22) of the Act.) Use of treatment methods which have no demonstrated history under field conditions relevant to the particular site should not be allowed as an alternative to burial except when the requirements for approval of an experimental practice under Section 785.13 of the final rules are fulfilled.

3. Several commenters questioned the 30-day limitation for completion of burial or treatment of acid- or toxic-forming spoil, suggesting both longer and shorter time periods. Some commenters felt that the 30-day period may not be feasible in all instances nor adequate for environmental protection. In addition it may increase costs and still may not allow enough

time to adequately assess the potential problem. However, a total disregard of the requirement or allowing a much longer time for treatment or burial does not meet the requirements of the Act to minimize the potential formation of water pollutants.

Laboratory leaching tests, conducted under both buffered and unbuffered conditions and designed to relate the acid-producing potential of a rock to its sulfur content, have shown that significant acid production begins within 24 hours of exposure of the rock to water. After 24 hours, the production rate of acidity tends to decrease, but after 20 to 30 days, increases again (Caruccio, 1968, pp. 125-126). The Office believes that the 30-day limitation for covering potentially toxic materials is a reasonable compromise that allows the operator a practical timeframe within which to work and, at the same time, protects against adverse environmental consequences resulting from long-time or unlimited exposure.

A requirement for immediate treatment or burial of material, might result in reduction of disturbance to the hydrologic balance. However, such a requirement would be unduly restrictive and costly and may cause other areas to be disturbed and thus prevent mining of some areas efficiently.

The Office chose to make no changes to the 30-day time requirement, as the provision was deemed necessary to ensure against acid or toxic drainage. However some flexibility for allowing temporary storage, with approval of the regulatory authority, is allowed where compliance with the 30-day period is not feasible. The regulatory authority may also specify a lesser time period where necessary.

4. Several other commenters questioned the reasonableness of requiring spoil burial and treatment only on the basis of the regulatory authority decision as to its potential acidity or toxicity. The suggested alternative would require that the regulatory authority determine the spoil to be, in fact, acid or toxic before burial or treatment.

This alternative was not accepted because it would authorize the regulatory authority to allow acid and toxic releases from spoil, thereby undermining the intent of Congress to preclude water pollution from occurring at all.

816.49 Hydrologic balance: Permanent and temporary impoundments.

1. The authority for Section 816.49 for the final rules is found in the Act in Sections 102, 201, 501, 502, 504, 515(b)(2), (4), (8), (10), (13), (19), (21), and (24).

2. The technical literature used in developing the performance standards for permanent and temporary impoundments includes that listed under "Hydrologic balance," Sections 816.41-816.57, and that listed under "Coal processing waste dams." Sections 816.91-816.93, in addition to other works cited below within the preamble.

3. The requirements contained in Section 816.49 set minimum standards for permanent and temporary impoundments. Soil Conservation Service (SCS) documents are incorporated by reference and contain the general design criteria to be used in designing permanent impoundments and all coal processing waste dams and impoundments. These design criteria were selected because these standards are widely used and accepted. The SCS had "built" 1.7 million ponds as of September 30, 1977, and is presently assisting in the design and construction of about 50,000 ponds per year. In addition SCS has constructed over 8,000 dams under PL 83-566 and PL 504 programs. SCS standards have proven to be workable and are not so restrictive economically as to prohibit construction of small impoundments. Because the final regulations require that coal processing waste dams and impoundments be designed in compliance with this Section, the requirements included in Sections 816.92(c), 816.91(a), 816.91(b), 816.91(c), and 816.91(d) of the proposed rules are now contained in Sections 816.49(d), 816.49(f), 816.49(g), 816.49(h), and 816.49(i), respectively. These requirements are in this Section since they are general requirements that are applicable to all dams and impoundments and are an integral part of the complete scheme suggested by the SCS standards. This Section should be read together with Section 780.25 which contains related permit application requirements, and the reader is referred to the preamble discussion for that Section for elaboration of additional issues relevant to Section 816.49.

4. Paragraph (a) of Section 816.49 contains the specific SCS design criteria that are to be used to design permanent impoundments and itemizes certain conditions that must be met before the impoundments will be permitted.

5. Paragraph (b) refers to the design requirements for sedimentation ponds as the criteria for all other temporary impoundments.

6. Paragraph (c) contains requirements that must be met before excavations that will impound water shall be allowed during or after the mining operations.

7. Paragraphs (d) and (e) provide for slope protection, sediment control, and vegetation of all unprotected areas to be accomplished contemporaneously with construction, in line with standard operational procedures for permanent structures under construction. (Brundage, R.S., 1974, pp. 183-185; Capp, J.P. et al, 1975, p. 44; Capp, J.P. and Gillmore, D.W. 1974, p. 200; Davidson, W.H., 1974, pp. 186-188; Dean, K.C. and Havens, R., 1972, pp. 450-457; James, A.L., 1966, p. 157; Leroy, J.C., 1972, pp. 441-415; Martin, J.F., 1974, pp. 27-28; USMESA, 1975, pp. 7.50-7.58; USSCS, 1974, pp. 19-29. See also ASCE, 1977, Colgate, J.L. et al, 1973; Ramsey, J.P., 1970; Riley, C.V. and Rinier, J.A., 1972.)

8. Paragraph (f) adopts inspection requirements by reference to 30 CFR 77.216-3. See responses to comments contained in Paragraphs (12)(1), (m), and (n) below for more detailed discussion of inspection requirements. An inspection program is necessary to discern any changes which could indicate problems developing with structures. (ASCE, 1974, p. 5; USMESA, 1975, 9.7-9.11. Sherard, et al, 1963, pp. 563-565; W. Va. Dept. of Nat. Resources (no date). See also Comptroller General of the U.S. (acting), 1977.)

9. Paragraph (g) requires maintenance of dams, which is essential to assure their continued stability and proper performance in accordance with the engineering and environmental standards. (Canada DEMR, 1977, p. 93; USBR, 1973, p. 521. See also ASCE 1973; Sherard, et al, 1963; USMESA, 1975; W. Va. Dept. of Nat. Resources, (no date).)

10. Paragraph (h) contains requirements for an initial certification of construction and an annual certification thereafter. This requirement is in compliance with current MSHA requirements. (Canada DEMR, 1977, pp. 93-95; USBR, 1973, pp. 521-523; U.S. Code of Federal Regulations, 30 CFR 77, 216-3; USMESA, 1975, pp. 9.7-9.26. See also ASCE, 1973; Compt. Gen of the U.S. 1977; Sherrard, et al., 1963; W. Va. Dept. of Nat. Resources (no date).)

11. Paragraph (i) contains procedures that must be followed in modifying structures that have been constructed.

12. Response to specific comments on the proposed rules and regulations are:

a. One commenter recommended that Section 816.49(a)(1), which requires that discharges from impoundments must not degrade the quality of receiving waters below the water quality standards under applicable State and Federal laws, be eliminated because this duplicates requirements under the Clean Water Act and State regulations. This recommendation was not accepted and this subsection is retained in the final rules in the same form it was proposed. The Office must, under the Act, insure that water quality standards are met. Retaining

this subsection gives the regulatory authority the right to review plans and inspect the mining operations for conformance to water quality standards. The Office believes that emphasis of some important requirements may be desirable when different agencies are regulating toward a common goal, such as improving water quality and protecting environmental values.

b. Another commenter suggested that Section 816.49(a)(1), (2), (3) and (4) contain some general requirements that are impossible with which to comply and that specific terms such as "adequate safety", "adjacent", and "surrounding" should be further defined. The terms used are common usage and these four subsections as adopted have not been significantly changed from the version proposed. These four paragraphs contain general requirements that are to be considered and addressed before permanent impoundments will be allowed on the mine plan area. The Office believes the intent of the language is sufficiently clear to enable operators, regulators and the public to meet their obligations and perform their intended functions under the Act. If further definitions are needed for a specific State, they can be included in the State program for that State.

c. Another commenter recommended that Section 816.49(a)(2) be expanded to state that the design high-water level in impoundments must be below the level of any tile drainage system in the vicinity, and that the impoundments may not affect seasonal variations in water tables in underground agriculture soils. This recommendation was not incorporated in Section 816.49(a)(2) because the Office felt the adverse effects with which the commenter was concerned were adequately covered by other provisions pertaining to the protection of the hydrologic balance, including Sections 816.41, 816.49(a)(4), 816.51, and 816.54 of these final rules.

d. Another commenter stated that the Soil Conservation Service's practice Standard 378 is not the same for each State and that Technical Release No. 60 is too detailed to be used. This commenter recommended that minimum design requirements be developed and included in the final rules rather than incorporating by reference the SCS design criteria. In developing the final rules three alternatives were considered:

(i) Incorporate by reference SCS design criteria for dams and impoundments as presented in Section 816.49(a)(5) of the proposed regulations;

(ii) Modify the proposed rules to incorporate by reference the current State SCS Standard rather than the National 378 Standard for "Ponds";

(iii) Develop design criteria and include the criteria in the final rules and regulations rather than incorporating by reference SCS design criteria.

The final rules and regulations were developed using the first alternative by incorporating by reference Technical Release No. 60 and the National 378 Standard as contained in the proposed rules. The design criteria were incorporated by reference because these standards are widely used and accepted.

The alternative to refer to the current State SCS 378 Standard rather than the National 378 Standard was rejected because the design criteria required for smaller embankments and impoundments as contained in the National SCS 378 Standard are adequate for national application. Requiring adherence to separate SCS 378 Standards for each State would cause confusion in applying different standards and would present logistical problems in distributing and maintaining the current standards while not providing any additional critical design criteria not contained in the National 378 Standard. In addition, since each State Standard is at least as stringent as the National 378 Standard, a State could adopt the State Standard for its regulatory program as an alternative standard approved as part of the State program under Subchapter C of these final rules. (See Section 731.13—the "State window.")

The alternative to develop specific design criteria and include them in the final rules and regulations was rejected because this would add considerable volume to the regulations with no appreciable benefit, since the SCS design criteria have proven to be adequate and acceptable design criteria for the size and type of dams and embankments anticipated in operations covered by these final rules.

(e) A few commenters recommended that design criteria be developed for different classes of dams and embankments which would allow smaller, low hazard structures to be designed to comply with less rigid design criteria. The final rules and regulations, which contain the incorporation by reference of SCS design criteria, provide for different design criteria for different classes of structures, which is appropriate, giving consideration to the risks.

(f) One commenter stated that the Soil Conservation Service does not publish changes to their design criteria in the FEDERAL REGISTER and that this could be a potential problem in incorporating by reference the SCS design criteria. SCS has agreed to inform the Office of any revisions issued to the design criteria referenced in Section 816.49(a)(5) and the Office intends to publish in the FEDERAL REGISTER the title and date of those revisions to the referenced design criteria which are to become standards under this Section.

(g) Commenters recommended that impoundments should be prohibited on steep slopes. This recommendation was not accepted because the design requirements contained in this Section are considered adequate to evaluate the acceptability of impoundments on steep slopes. In some cases, however, it will be impossible to design an impoundment on a steep slope and meet the design requirements in the referenced SCS design standards contained in Section 816.49(a)(5). In such circumstances, no impoundment will be permitted.

(h) Another commenter questioned whether fish and wildlife structures were allowed under the criteria contained in this Section. The statement contained in the SCS design criteria, which are incorporated by reference in this Section, includes multiple uses, one of which is fish and wildlife.

(i) One commenter recommended that impoundments be allowed to be retained in final cut areas of area stripping operations. This recommendation was accepted and Section 816.49(c) was added to the final rules to contain the specific requirements that must be met in order to retain excavations that will impound water during or after the mining operation. These excavated slopes shall be stable and not pose a safety hazard and shall meet the basic requirements of the Act concerning the elimination of highwalls.

(j) A comment was accepted which recommended that "structures" be changed to "measures" in Section 816.49(d) (proposed Section 816.92(c)) because there are other effective ways to control sediment at a construction site besides structures. Structures will be required in many instances, under Section 816.42, which applies to these impoundments.

(k) One comment, recommending that a requirement to establish vegetation on permanent and temporary impoundments be included in Section 816.49, was also accepted. Section 816.49(e) was added to the final rules. Vegetative and revegetative requirements were contained in proposed Sections 816.106 and 816.111–816.117. Adding the cross reference to these Sections in the final rules does not impose any additional requirements, but only assures that the requirements are not overlooked.

(l) Commenters suggested editorial changes to proposed 816.91(a); i.e., change reference of 30 CFR 77.316–3 and Mine Safety and Health Review Commission to 30 CFR 77.216–3 and Mine Safety and Health Administration respectively. These references

have been corrected since the original citation was a typographical error which was not misleading, since the reason for the cross reference was clear, and since the substance of the material was set forth elsewhere in the proposed rules and preamble to the proposed rules. The entire paragraph was moved to 816.49(f) in the final rules.

(m) A commenter suggested further clarification of construction inspection requirements and the need to insure that construction is properly controlled and inspected. The commenter also expressed general concerns about applicable regulations for dams that are not constructed of coal processing waste and suggested reordering of topics for clarity. These suggestions were accepted, and inspection requirements originally proposed in Section 816.91(a) were clarified and moved to Section 816.49(f) because adequate inspection requirements are necessary for all dams and impoundments. Special design requirements for coal processing waste dams have been clarified in the final rules by modifications to Sections 816.91-816.93.

(n) Commenters expressed a desire to delete requirements for periodic inspections of smaller dams of certain size criteria and the inspection requirements by registered professional engineers. The final rules were changed to delete the 7-day inspection requirements for smaller dams that do not meet the size or other criteria contained in MSHA regulations. All dams and impoundments require a certification, immediately after construction and annually thereafter, that the structure has been constructed and maintained to comply with the design standards. This certification will require that an inspection of the structure be conducted before it can be certified. OSM believes that a single certification will adequately cover the inspection requirements for those structures not meeting the size or other criteria contained in MSHA regulations because of the reduced risk they pose to the environment, health and safety.

(o) A commenter suggested that a reference to "person" in Section 816.49(i) be defined (proposed Section 816.91(d)). The final rules were reworded for clarity to eliminate the reference.

§ 816.50 Hydrologic balance: Ground water protection.

(1) Section 816.50 is adopted to protect the ground water portion of the hydrologic balance from surface mining activities under the authority of Sections 102, 201(c), 501(b), 503, 504, 507(b), 508(a), 510(b)(3), 515(b), and 517 of the Act. The uncontrolled discharge of drainage from coal mining operations has been the documented source of massive adverse impacts upon water quality and the ecology of surface and ground waters, as is discussed in detail in Sections B III-4(a)(2), (b), B-III-4(a)(3) and B-III-4(b) of the Final Environmental Impact Statement accompanying these regulations. Control over discharges from affected areas to ground water is possible, through the investigation of the potential impacts of the mining operation in the permit application review process, leading to the proper location, design, construction, maintenance, utilization, and reclamation of pits, cuts, auger holes, other excavations and spoil and waste disposal facilities.

(2) These controls are to be instituted, first, with respect to backfilling operations under Section 816.50(a). Implementation of Section 816.50(a) will require careful adherence to the requirements of Sections 816.48 and 816.100-816.105, which also regulate backfilling. In particular, the provisions of Sections 816.48 and 816.103, related to handling of acid-forming and toxic-forming spoil, are critical to the success of efforts to protect ground water.

As proposed, Section 816.50(a) would have regulated backfilling to protect the ground water system "offsite," a term that was nowhere expressely defined and, therefore, subject to ambiguous interpretation. To guard against that possibility, the final version of 816.50(a) provides for protection against adverse effects of backfilling on ground water systems outside the permit area, with the latter term being specifically defined at 30 CFR 701.5. It should be noted, however, that this does not mean that ground water systems anywhere within a permit area may be allowed to be polluted by surface mining activities. Rather 816.50(a) requires that, as a minimum, protection be afforded to ground water outside the permit area, which will ordinarily also require protection of ground water inside the permit area so as to preclude the drainage of pollutants to adjacent areas.

(3) The second means by which this section will protect ground water is to require careful regulation of mining-related earth excavation and other disturbances to land under Section 816.50(b). Important complements to this provision are Sections 816.13-816.15, 816.53 and 816.55.

(4) Technical literature utilized as support for Sections 816.50 and 816.51 as cited in the general preamble to Sections 816.41-816.57 includes:

Dollhopf et al. 1977, pp. 108-128; Feder, et al. 1976, pp. 86-93; Feder, et al. 1977, pp. 173-179; Grim and Hill, 1974. pp. 2, 24; Hardaway and Kimball, 1976, 29 p.; Hardaway and Kimball, 1978, 19 p.; Hardaway et al., 1977b. pp. 61-135; Hamilton and Wilson, 1977, 156 p.; McWhorter et al., 1977, 357 p.; Shumate et al., 1971, 81 p.; Pagenkopf et al., 1977, vol. 3, No. 2, p. 107-126; National Academy of Sciences, 1974, 198 p.; Pennington, 1975 pp. 170-178; Pietz et al., 1974, pp. 124-144; Rahn, 1976, 108 p.; Rogowski et al., 1977, vol. 6, No. 3, pp. 237-244; U.S. Environmental Protection Agency, 1977c, 21 p.; Van Voast, 1974. 24 p.; and Van Voast and Hedges, 1975, 31 p.

(5) As proposed, Section 816.50(c) authorizes the regulatory authority to require the submission of data of various types. Upon the review of comments on this Section the Office was decided that the provision was redundant of the permit application requirements (Sections 779.14-779.15, 780.21) and the monitoring regulation (Section 816.52) and therefore, the Office has deleted it from the final rules.

§ 816.51 Hydrologic balance: Protection of ground water recharge capacity.

(1) The impacts of surface mining activities on ground water may vary considerably, depending on the scope and extent of aquifers involved, water infiltration rate, the porosity and permeability of the excavated overburden, the compaction of the backfill in disturbed areas, whether mining operations are conducted above or below the water table, and the extent of ground water use in the recharge areas.

(2) Section 816.51 is adopted to protect the recharge capacity of aquifers in areas affected by surface mining activities.

Uncontrolled mining and reclamation practices can result in significant degradation of infiltration rates, decline in ground water levels and flow from springs, and changes in water-bearing characteristics within any aquifer recharge area.

Recharge capacity is defined in Section 701.5 and conceptually is the ability of the soil and rock materials to receive water, store it for a variable period of time and slowly release it, usually to lower elevation streams, water bodies or in response to well pumpage. The movement of surface water (precipitation and surface flow) to recharge the ground water zone is controlled primarily by the infiltration characteristics of the surface soil (Chow, V. T. 1964. Handbook of applied hydrology, McGraw-Hill, Chapters 12 and 13). When mining disturbs the surface soil, it changes the infiltration characteristics, primarily ambient soil moisture, structure and porosity. If the infiltration is reduced by compaction in backfilling, the soil pores are clogged from fine sediment, the rate of infiltration is reduced and thus recharge is reduced. Water levels and

spring flows then will be adversely affected. The opposite can occur, if the waterbearing characteristics, such as porosity and transmission, are improved. Thus, careful consideration in mining and reclamation must be given, for example, to proper location of ponds, backfilling techniques and diversions in local recharge areas to ground water.

(3) Legal authority for this Section is found in Sections 102, 201(c), 501(b), 503, 504, 507(b), 508(a), 515(b), and 517 of the Act.

(4) The primary protection afforded recharge capacity under the Act is provided for in Section 515(b)(10)(D) of the list, requiring the postmining restoration of the approximate premining recharge capacity. As proposed, however, Section 816.51 contained an ambiguity, for although the main text of the Section required restoration to "approximate" premining levels, Section 816.51(c) would have required restoration to a recharge capacity "at least equal" to that prior to mining. Many commenters argued that Section 816.51(c) be revised to more closely follow the language of Section 515 (b)(10)(D) of the Act. To resolve the ambiguity in the proposed rule and in response to those comments, Section 816.51(c) was changed in the final rule to require "a rate of recharge that approximates the premining recharge rate."

(5) One commenter claimed that the restoration of recharge is impossible on certain "scoria deposit" lands in the West. To the extent, however, that the Act requires restoration (e.g. to approximate pre-mining levels) as noted in above discussion, this comment could not be accepted as a basis of change to the regulations.

(6) Several commenters suggested that the regulatory authority be afforded discretion under Section 816.51 to waive the requirement of restoration to approximate premining recharge capacity on a case-by-case basis. These commenters, however, provided no data to support such a waiver, nor did they suggest specific criteria by which waivers could be assessed to avoid inconsistency in administration of the Section. Further, adoption of such a broad waiver provision would be tantamount to a general variance clause, which was not contemplated as available in implementation of Section 515(b)(10)(D) of the Act, for there is no indication in either the language of that Section or the legislative history that Congress desired that broad exemptions be afforded to the requirement of restoration of recharge capacity. Moreover, since restoration is required to "approximate" premining levels, the regulatory authority is afforded sufficient discretion to account for local physical characteristics in administration of Section 816.51 without the need for a waiver clause. As a result, the Office declined to accept these comments.

(7) One commenter suggested that the term "rate of recharge" in Section 816.51(c) be specifically defined. Such a definition was believed unnecessary because the meaning of "capacity", as used in the context of "recharge capacity", implied the rate or the ability to receive, store and transmit water.

§ 816.52 Hydrologic balance: Surface and ground water monitoring.

A. Section 816.52 is adopted to require persons conducting surface mining activities to conduct surface and ground water monitoring, under the authority of Sections 102, 201, 501, 503, 504, 506, 507, 508, 509, 510, 515, and 517 of the Act. Because mining can adversely impact upon water resources in many ways (Curtis, 1974, pp. 92–97; Dyer and Curtis, 1977, p. 13; Simpson, 1977, p. 8; USDA, 1973, pp. 5–8; Grubb and Ruyder, 1972, pp. 16–58; U.S. DOI, 1967, pp. 50–64; Striffler, 1973, pp. 180–186; Turner, 1958, p. 2; Kinney, 1964, p. 27; and Warner, 1973, p. 11) monitoring is essential to provide sufficient data for evaluating the effectiveness of control technologies employed, forewarn against the development of adverse effects not identified in the permit application stage, ensure that adverse effects are not inadvertently created, and evaluate whether activities are being conducted in compliance with applicable requirements of the Act, this Chapter, the regulatory program, and permit conditions.

The basis and purpose of Section 816.52 was, in general, explained at 43 FR 41751–41752 (Sept. 18, 1978). The foundation for the monitoring requirements will be the specific requirements imposed by the regulatory authority in approval of the plan submitted under 30 CFR 780.21(b)(4).

B. (1) Section 816.52(a) specifies minimum requirements for ground water monitoring programs. Under Section 816.52(a)(1), ground water levels, infiltration rates, subsurface flow and storage characteristics, and ground water quality are to be monitored as required by the regulatory authority. Thus, ground water monitoring will be required at those sites where there is a possibility of disruption or degradation of the ground water system.

Ground water systems can be extremely complicated; consequently, to design a monitoring program of value, it is essential that information be available on the basic geohydrological characteristics of potentially impacted ground waters. (Hardaway, 1978; Chow, V.T., 1964, pp. 4–23.) Additionally, sampling procedures must be carefully developed to obtain representative samples. Installation of sampling and observation wells may be the only feasible alternative for monitoring many of the potentially impacted aquifers. (See the preamble discussion to Sections 779.13–779.15.) Establishment of baseline conditions is also essential requiring sampling in advance of mining (See Sections 507, 508, SMCRA.)

(2) Section 816.52(a)(1), as adopted, was modified in the final rule to specify that monitoring should be adequate to evaluate surface mining activities impacts on water in "the mine plan area," which is a defined term under the regulations, while "mine site" is not.

(3) Commenters suggested that specific limits be placed on the amount of well drilling and testing which should be required in connection with Section 816.52(a). While agreeing that monitoring must be adequate for its intended purposes, these commenters believed that no more than two wells or ten tests (including wells) per 50 acres under permit is needed. This was rejected, since it would place unnecessary constraints on the regulatory authority to determine, through monitoring, that there is minimal change to the hydrologic balance according to collection of representative data. (See the preamble discussion to Sections 770.5 and 779.13–779.15.)

(4) Section 816.52(a)(2) specifies circumstances when ground water monitoring is mandatory and is intended to fulfill the specific requirements of Section 517(b)(2) of the Act. In those circumstances, monitoring should include water, mineralogical, and chemical analyses to include both changes resulting from mining and to predict how mining and reclamation may need to be revised. (See the preamble discussion to Sections 770.5 and 779.13–779.15.)

(5) Sections 816.52(a)(1)–(2), as proposed, were objected to as requiring monitoring in some circumstances where ground water was either unlikely to be impacted, where ground water is not ecologically significant, or will not likely be useful for public or private consumption. In response to these comments, Section 816.52(a)(2) has been reworded to more closely track the language of the Act, with respect to situations where ground water monitoring must be conducted, leaving to the regulatory authority discretion under Section 816.52(a)(1) to require monitoring in other circumstances.

(6) Section 816.52(a)(3) is adopted to provide the regulatory authority with the power to require specialized monitoring, if necessary, for evaluation of surface mining activities compliance with the requirements of Sections 816.50 and 816.51.

Two commenters proposed revisions to Section 816.52(a)(3), to indicate that the additional hydrologic tests which may be required in this Section be conducted after reclamation. This was rejected as redundant. The existing wording allows for additional tests to be required either during or after mining and reclamation.

(7) Four commenters suggested rewording Section 816.52(a)(3) by deleting the words "specified and." The commenters felt that any additional hydrologic tests required by the regulatory authority should be planned by the operator, rather than specified by the regulatory authority. This alternative was rejected, since the regulatory authority may need to specify specific tests to be conducted, or it could specify that the operator develop a plan for additional testing which would have to meet regulatory authority approval. Moreover, this wording puts the burden on the regulatory authority to specify additional testing, if it decides that either the initial plan was inadequate or based on results obtained from the tests, that more testing is necessary.

(8) One commenter expressed concern as to whether or not there are enough qualified technical personnel available to meet the potential work load which may result from the requirements of this Section and other parts of the regulations. The Office feels that there presently are enough qualified people to meet this predicted demand, and, in any event, the demand will be filled quickly.

(9) One commenter proposed that the requirement for determining post mining recharge capacity be deleted, due to the expense and difficulty of those tests. This comment was rejected, however, since Section 515(b)(10)(D) of the Act requires restoration of the recharge capacity of mined areas to the approximate premining condition. It is noted, however, that as interpreted in Section 816.51, the restoration requirement applies to the overall mine area, not necessarily to fills or coal processing waste and refuse disposal sites. Thus, highly detailed monitoring, as apparently assumed by the commenter, may not ordinarily be required.

C. (1) Section 816.52(b) establishes minimum requirements for surface water monitoring. Under Section 816.52(b)(1), the regulatory authority is to specify the nature of data, frequency of collection, and reporting requirements, subject to the standards of Section 816.52(b)(1)(i)–(iii). The provision for regulatory authority specification of these items was shifted from Section 816.52(b)(2) in the proposed rule, to eliminate confusion that the proposed rule may have created as to what phases of mining and reclamation the regulatory authority's specification power and duty applies.

(2) Surface water monitoring requirements should be tailored to the wastewater and available treatment facilities. Wastewaters with highly variable concentrations and quantities of potential contaminants must be sampled more frequently than discharges which have relatively constant or low levels of contaminants. If adequately designed, operated, and maintained, settling ponds and automatic neutralization facilities (for acid or toxic mine drainage) will assure that the treated effluent will be relatively constant in character and contain low levels of contaminants, therefore, requiring a minimum of monitoring to document compliance with the permit limitations.

(3) Four comments were received proposing that further minimum criteria be delineated for the collection of hydrologic information. These criteria were not developed, because of the impossibility of accounting in national rules for many variables that would have to be considered, including the proximity and utility of historic data, knowledge about the characteristics of a site, and the availability and applicability of hydrologic models that might be used to simulate information.

For example, in areas where there are extensive historic hydrologic data available and/or where a regionalized hydrologic model is applicable, premine measurements might be aimed only at detecting anamolous conditions, while in an area with little available data, extensive measurements might be required. These decisions are left to the regulatory authority. A major Federal interagency effort has been underway, for some time to develop guidelines for acquiring water data information. Two documents from this effort will soon be offered as guides to help regulatory authorities:

(a) U.S. Geological Survey. 1979. "Water Quality Data Needs for Small Watersheds." Office of Water Data Coordination, Federal Interagency Work Group on Water Quality Data Needs for Small Watersheds, Reston, VA (in final preparation; to be released in 1979).

(b) U.S. Geological Survey. 1979. "National Handbook of Recommended Methods for Water Data Aquisition" Office of Water Data Coordination, Reston, VA (Chapter 3 on Sediment, Chapter 5 on Chemical and Physical Quality of Water, and Chapter 7 on Basin Characteristics were completed in 1977, and seven other chapters are in various stages of completion and will be published by the end of 1979).

(4) Several commenters felt that Section 816.52(b) should be modified so that it required only monitoring under NPDES permitting. These commenters cited Missouri and a few other States where non-point source discharge monitoring is required under NPDES permits. The Office rejected this alternative, first, because national regulation of non-point source discharges from coal mines does not occur under the NPDES permit program administered under the Clean Water Act, 33 U.S.C. Section 1341–1342, but rather under particular provisions of Missouri and a few other State's laws. The requirements for NPDES permits under the Clean Water Act simply do not, as a matter of nationwide Federal law, apply to non-point sources. Furthermore, EPA's regulation establishing effluent limitations for discharges from surface coal mines and, therefore, monitoring of those discharges under Section 301(b)(1)(A) and 304 of the Clean Water Act (33 U.S.C. Section 1211(b)(1)(A), 1314), are expressly limited to point source discharges and only during the active phase of mining. See 40 CFR Part 434 (1976).

The Office has carefully coordinated Section 816.52 with monitoring requirements imposed on a national basis under the NPDES system. The Office does not feel that this Section creates substantial duplication or additional reporting and monitoring requirements from those required under NPDES permits. As Section 816.52(b)(1)(iii) indicates, the requirements of this paragraph can be ordinarily satisfied with regard to point-sources by compliance with the monitoring and reporting requirements of the Act permittee's NPDES permit. The only additional requirement imposed by Section 816.52 in most cases with respect to point sources will be for the permittee to notify the regulatory authority of the location of filing of the NPDES self-monitoring report. Of course, there will be additional monitoring for non-point sources as required by Sections 515(b)(10) and 517 of the Act.

Lastly, as indicated above, the requirements of Section 816.52(b) can ordinarily be satisfied, for discharges subject to NPDES permits, by compliance with NPDES monitoring and reporting requirements. Therefore, to the extent that Section 816.52 arguably covers the same discharges as under NPDES permits, it complies with the requirement of Section 201(c)(12) of the Act that the Office "cooperate with other Federal agencies . . . to minimize duplication."

(5) One commenter felt that the regulations appeared to limit monitoring to automated sampling devices. This is not true; Section 816.52 merely requires that sampling be adequate to meet approval of the regulatory authority and does not necessarily exclude manual sampling.

(6) One commenter felt that the requirement of Section 816.52(b)(1)(i) with regard to water quantity monitoring should be deleted as it was too burdensome. The Office rejected this proposal, since information on quantity of water is expressly required by Sections 507(b)(11), 508(a)(13)(c) and 517(b)(2) of the Act. Further, Sections 510(b)(3) and 515(b)(10) require that the regulatory authority ensure that operations are designed and conducted to "prevent material damage to the hydrologic balance." "Hydrologic balance" is defined to include water quantity (see Sec. 701.5 of the regulations).

(7) Three commenters felt that when the analyses for water quality constituents (parameters) are found to be at insignificant concentrations, then those analyses be discontinued, and suggested that this be specified in 816.52(b)(1), to allow a decrease in the monitoring of constituents that consistently meet the effluent limitations. The Office rejected this proposal as redundant. The language of the final rule at 816.52(b)(1) is sufficiently flexible for the regulatory authority to revise the monitoring program to fit such situations.

(8) Several commenters suggested several alternatives of limits for monitoring requirements in Sections 816.52(b) and 817.52(b). These alternatives suggested that water quantity measurement requirements be deleted, require a demonstration that the infiltration capacity has been restored, and specify the limits on the amount of change that will be allowed to the streamflow regime.

These alternatives were rejected, because Section 515(b)(10) of the Act requires that the disturbance to the prevailing hydrologic balance (quantity and quality) be minimized and Section 517(b)(2)(A) of the Act specifically requires surface water monitoring where mining overlies potentially significant aquifers. The regulatory authority may require that a discharge magnitude accompany certain water quality samples to evaluate the quantitative impact on parts of the hydrologic system. The return of infiltration to "approximate premine recharge capacity" is believed to be a sufficient requirement, because recharge rates cannot be restored unless premine infiltration rates are also approached. It would also be very difficult to set more specific requirements for allowed variations, because of site and related hydrologic differences. The regulatory authority must determine the details of monitoring requirements on a case-by-case basis.

(9) Three commenters felt that the frequency of monitoring reports specified in proposed Sections 816.52 (b)(1)(iii) and 816.52(b)(1)(iv) and in the corollary subsections of Section 817.52 were not consistent. The Office agreed, and revised the final rules, by combining the Sections into a single Paragraph for Sections 816.52(b)(1)(iii) and 817.52(b)(1)(iii).

(10) Three commenters suggested that Sections 816.52(b)(ii)–(iii) and 817.52(b)(ii)–(iii) be modified to more closely align these Sections with EPA reporting requirements under the NPDES system. The Office concurred with the commenters and has appropriately changed these subsections to specify reporting of violation within five days, reporting of violations by a second statement of analytical results, and a general quarterly reporting period.

(11) Under 816.52(b)(2), monitoring is required to continue throughout the reclamation period. This Section was revised from the proposed rule, to account for modifications made to Section 816.42(a) in response to comments. Those comments objected to the provision of Section 816.42(a), as proposed, which could have been read to preclude bond releases and removal of sediment ponds by reference to Section 816.52(b), unless drainage from a reclaimed area met the effluent limitations of Section 816.42(a). As explained in more detail in the preamble to Section 816.42(a), this was not the Office's intention. Section 816.42(a), as adopted, specifies that such drainage meet applicable stream water quality standards, not Section 816.42(a)'s effluent limits.

Section 816.52(b)(2) has been modified, first, to provide that monitoring data collected by the operator *may* be used for determining bond releases under Section 816.42(a), but leaves to the regulatory authority discretion as to whether other data, collected by State or Federal agencies, should be used instead, recognizing that stream sampling is a different problem than monitoring of discharges only. In addition, Section 816.52(b)(2) was revised to delete the phrase "and for determining when the requirements of *this Section* are met," as Section 816.42(a), not Section 816.52(b), establishes the relevant substantiative bond release criteria in the final rules.

(12) In 43 FR 41751, September 18, 1978, a previous comment suggested that all operators be required to conduct continuous total suspended solids/sediment monitoring in the first, second, and third streams downstream from discharges from the areas disturbed by a particular operation. Upon further consideration of this alternative the Office has concluded that, if effluent guidelines are met, if the hydrologic balance is restored on the mine plan area, and all reclamation completed, there is no reason to expect that significant adverse changes will be found in downstream sediment loads at great distances from the mine site. The alternative suggestion has, therefore, been rejected as a general requirement for all mining operations.

(13) Two commenters believed that the word "monitoring" in Sections 816.52(b)(3) and 817.52(b)(3) referred to continuous, automated monitoring devices. The intent is that the monitoring requirements are to be determined by the regulatory authority on a case-by-case basis. The need for continuous automated monitoring, therefore, need not be required in all cases.

§ 816.53 Hydrologic balance: Transfer of wells.

(1) Under Sections 512(a) and 515(b)(10) of the Act, the use of drill or bore holes as water wells is to be closely regulated in both coal exploration and surface mining activities, to prevent ground water pollution, as is explained in the preamble to Section 816.13–816.15 and portions of the final EIS corresponding to these Sections. The uncontrolled use of wells in coal mining can be a source of serious ground water contamination, by creating cross-connection between polluted surface or ground water and previously uncontaminated aquifers.

On the other hand, these wells also can be used, subject to careful regulatory controls, as sources of water for domestic and public consumption by occupants of the surface lands on which these wells are located. Use of wells already created during mining operations is preferable to construction of new and additional wells by the surface occupant, both because of the additional expense involved and also the danger that a new well will shift ground water drainage patterns in a way unforeseen during the operator's careful process of formulating and implementing a reclamation plan to protect ground water resources (See 30 CFR 780.21).

To allow for the continued use of water wells used in coal exploration and surface mining activities, the Office has adopted Section 816.53 in the final rules, under authority of Sections 102, 201(c), 501(b), 814, 503, 507(b), 508(a), 510(b)(3), 512(a), 515(b), and 517 of the Act. Section 816.53 will provide for satisfactory accommodation between first, the requirements of the Act that wells used in coal exploration and surface mining activities be properly constructed, operated, and reclaimed to protect ground water from pollution and, second, the interests of the public in having ground water made usefully available.

(2) Under Section 816.53(a) the regulatory authority may approve the transfer from the operator to the owner of surface lands, of exploratory or monitoring wells, for use by the sur-

face owner or lessee thereof as water wells. Approval of a well transfer must be supported by a written transfer request. Under Section 816.53(b) primary responsibility for any liability for damages, eventual plugging, and compliance with Section 816.13–816.15 passes to the surface owner upon approval of the transfer. Under Section 816.53(c) the permittee remains secondarily liable for those obligations until release of the applicable performance bond.

(3) The Office recognizes that standards for the construction of potable water supply wells generally require construction practices which assure protection from surface pollution. Since wells intended for potable supply uses are usually subject to regulation by local public health agencies, it is expected that the regulatory authority may require certification from the local government agency, before the well transfer is approved for potable supply use. Stock and irrigation uses, however, when well yields are sufficient for these purposes, usually do not require local agency inspection and approval.

(4) As proposed, Sections 816.53 and 817.53 contain no provision for cutting off the transferor/operator's secondary liability for assuring compliance with the requirements of the Act. Several commenters objected to this, indicating that perpetual liability would be so onerous as to preclude the transfer of good wells. In response to these comments, the Office considered three substantial alternatives.

First, it was considered whether to exempt the transferor/operator from any secondary liability. This alternative was rejected, however, because under Section 515(b)(10)(A)(iii) of the Act, the industry is charged with responsibility for protection of the hydrologic balance, in the first instance, both during and after mining operations. Thus, it is believed that Congress intended that the industry assume ultimate responsibility for assuring that wells used in coal mining do not result in ground water pollution. Moreover, it is the industry which will have both the resources and expertise to insure that wells are satisfactorily abandoned, if no longer needed, or if their use is leading to adverse effects on ground water.

On the other hand, the Office recognizes that Congress also expected that the operator's obligation to protect ground water was not one of absolute perpetuity, inasmuch as performance bonds are releasable under Section 519 of the Act at a relatively finite point. Therefore, the Office also considered and adopted an alternative whereby the transferor/operator's secondary liability for the well terminates upon approved release of applicable performance bond. As long as the operator is still conducting reclamation in a permit area, it will be relatively easy for the operator to conduct necessary repairs or closing operations to a well.

If a transferee does not maintain the well, the transferor's cost should not be excessive to return to fulfill his/her obligations under Sections 816.53(c) and 817.53(c).

The Office also considered, but rejected, an alternative limiting the transferor's secondary liability to 12 months after the transfer, because this is a relatively short period in which to determine whether the surface owner has satisfactorily administered a transferred well. Tying the elimination of secondary liability to bond release provides the regulatory authority with a sufficient length of time in which to determine, accounting for seasonal variations, that the surface owner can satisfactorily manage the well.

(5) Several commenters questioned the applicability of Paragraphs 816.53(d) and 817.53(d) in the proposed rules and also pointed out that the paragraph could have been construed to entirely negate the rest of the Section, as Paragraph (d) seemed to say that 816.53 and 817.53 would not support any State law on well transfers. Because Section 515(b)(10) of the Act requires that wells used in coal mining be used and reclaimed to protect ground water resources, it is necessary that State law, allowing for a different result, be pre-empted by Sections 816.53 and 817.53. Accordingly, to eliminate confusion, Paragraph (d) has been deleted in the final rules. In summary, it is the Office's intention that transfer of wells may be permitted under certain circumstances and with certain responsibilities as outlined above. It is not the Office's intention, through this provision, to supersede State or Federal law regulating only the use or allocation of water.

§ 816.54 Hydrogic balance: Water rights and replacement.

This Section provides that surface mining activities are to be performed in such a manner that water is not contaminated, interrupted, or diminished by the mining operations, and requires the replacement of domestic, agricultural, industrial, or other legitimate water supply when impaired by the mining activities. Authority for this Section is found in Sections 507(b)(11), 508(a)(13), 510(b), 515(b)(10), and 717 of the Act.

(1) A few commenters suggested that the word "proximately" should be added to the regulations, to conform with the text of Section 717 of the Act. This suggestion was accepted.

(2) A commenter questioned whether the operator, in consultation with the owner of interest, should be provided with the option of either replacing water affected by contamination or compensating the owner of interest for that loss. It was asserted that this would be a less expensive method than physically supplying replacement water. If ruined waters are not replaced, owners of interest may never find potable water sources for the replacement on their own. Moreover, Sections 508(a)(13) and 717 of the Act require that replacement, not compensation, be provided.

(3) Two commenters questioned who should have the burden of proof in administration of Section 816.54. Although the regulation does not explicitly establish this, the Office believes no additional language needs to be added to this Section. Under the normal rules of administrative law, the initial burden of production and proof will rest with the party asserting that a water supply source has been affected by interruption, whether a proceeding to enforce Section 816.54 is initiated by the Office or a State regulatory authority under Subchapter L or by a citizen under Section 520 of the Act or other relevant provisions of law.

(4) One commenter felt that the Section should be changed to provide that the operator would not have to replace the landowner's water supply, if the landowner indicated replacement was not wanted. The Office rejected this proposal, as Section 717(b) of the Act clearly requires replacement in all instances. Moreover, allowing present owners to waive the benefits of 816.54 would not provide adequate protection for present lessees or for future owners of the property involved.

§ 816.55 Hydrologic balance: Discharge of water into an underground mine.

(1) Section 816.55 provides for protection of the mining areas's hydrologic balance by restricting the diversion of discharge of water from surface or underground mines and the discharge of waste water, including coal processing waste, into other underground mine voids. Use of underground mines for wastewater disposal has the potential of degrading ground water aquifers and stream flow, (USEPA, 1976(a), pp. 90–93, Spaulding and Ogden, 1968, p. 17). However, such practices may be more cost effective than surface disposal facilities for an equivalent degree of environmental protection and, additionally, advantageous in such areas as fire protection, abatement of acid mine drainage, and subsidence control by filling mine voids through sedimentation of suspended solids. Consequently, the regulations would allow the practice, pro-

vided that all necessary precautions are taken to assure the protection of the area's water resources and meets with the approval of the Mine Safety and Health Administration (MSHA). It should be noted that the regulatory authority's approval of such a practice will be based on environmental protection and safety criteria, as required in Sections 102, 201, 515(b)(10), 515(b)(12), and 702 of the Act, and not economics.

The Office considered an outright ban on all discharges into underground mine workings. However, this would preclude the environmentally beneficial measures authorized under this Section. Legal authority for this Section is Sections 102, 201, 501, 503, 504, 506, 507, 508, 510, 515, 516, 517, and 702 of the Act.

(2) Two commenters pointed out that a safety hazard might be involved in discharging water into underground voids; accordingly, Paragraph 816.55(e) has been added, requiring MSHA approval prior to allowing discharges under 816.55. Other editorial corrections were made to 816.55, to improve clarity or correct obvious inaccuracies. The Section was reworded to include all discharges into underground mines. Section 816.55(a) was reworded to apply to surface mining activities, which is the Part, of course, to which 816 applies. Section 816.55(b)(7), as proposed, was moved to 816.55(c). Compliance with effluent limitations on the ultimate discharge from the underground mine workings was specified, to insure that these discharges do not circumvent the requirements of 816.42(a)/817.42(a).

(3) Several commenters objected that proposed 816.55(b) did not allow for the discharge from the surface into underground workings to be exempted from the pH limitations of 816.42(a) although an exemption was allowed from the total suspended solids limitation.

The commenters pointed out that this would preclude the use of mine workings for storage of acid wastes and/or as an intermediate conveyance facility to a mine drainage treatment plant, requiring unnecessary pre-treatment prior to the discharge into underground workings. Accordingly, the final rule was modified to allow for an exemption as proposed by the commenters. It should be clearly understood, however, that any discharge from the underground workings must meet all relevant effluent limits of 816.42(a) through 816.55(c).

(4) Two commenters felt that 816.55(b) should be deleted because they doubted that the diverted waters would ever meet the effluent limitations and thus there was no reason for not discharging it directly. The Office rejected these comments, because whether or not such waters will ever meet the effluent limitations is conjecture. The subsection is designed to protect the hydrologic balance, but also to provide flexibility for the regulatory authority to grant variances for pH and total suspended solids.

§ 816.56 Hydrologic balance: Postmining rehabilitation of sedimentation ponds, diversions, impoundments, and treatment facilities.

(1) Authority for this Section is found in Sections 102, 201, 502, 504, and 515 of the Act. The requirements of Section 816.56 are intended to control the renovation of permanent structures prior to abandoning the permit area. Renovation shall be required to restore all permanent structures to criteria specified in the detailed design plan for each structure approved by the regulatory authority.

(2) Four commenters suggested that this Section should require renovation of all permanent structures allowed to remain, to critera specified in the permit, rather than to require restoration to the original design as was provided in the version of this Section proposed September 18, 1978. Four other commenters suggested modification of the renovation requirements to requirements appropriate for the approved land use. All suggested that restoration to the original design would unnecessarily require removing silt accumulations from all impoundments regardless of the postmining use. Alternatives considered for developing the final rules were (1) to leave rules as proposed, which requires that all structures be restored to the original design, (2) change the renovation requirements to those approved by the regulatory authority in the detailed design plan, and (3) change the renovation requirements to criteria appropriate for the postmining land use.

The final rules were developed using the second alternative, which requires that permanent structures shall be renovated to criteria specified in the approved detailed design plan for the structure. This will give the flexibility needed to renovate the structure to suit postmining land use and will assure that the regulatory authority reviews and approves all renovation plans. The first alternative was rejected because OSM believes that it is too restrictive and that the regulatory authority should be allowed some flexibility in determining how structures should be renovated on a site-specific basis. The third alternative is incomplete, and was not accepted because the Ofice believes that, although appropriateness for post-mining land use is one standard to be met, other standards also should be brought into consideration, as appropriate, in the detailed design plan.

§ 816.57 Hydrologic balance: Stream buffer zones.

(1) Authority for this Section is Sections 102, 201, 501, 503, 504, 506, 507, 508, 510, 515, and 517 of the Act. In particular, this Section is promulgated to implement Sections 515(b)(10) and 515(b)(24) of the Act. Buffer zones are required to protect streams from the adverse effects of sedimentation and from gross disturbance of stream channels, as explained in further detail in the Final Environmental Impact Statement (p. BIII-59).

(2) The general rule of Section 816.57 recognizes that buffer zones are an effective method to be used, in conjunction with sedimentation ponds and other techniques, to prevent sedimentation of streams by runoff from disturbed surface areas (Tennessee Valley Authority. 1971. 10 pp.; Karr and Schlosser, 1978, pp. 229–234; Grim and Hill, 1974, pp. 102 and Appendix D, pp. 255; Hardaway and Kimball, 1976, pp. 27–29; Weigle, 1965. p. 314; and USEPA, 1976b, Erosion and Sediment Control, Vol. 1, pp. 7, 14, 19, 30, 32, 61–62). It also recognizes that small streams may have a biologic community of considerable complexity worthy of protection under section 515(b)(24) of the Act, even if the streams are not perennial (Hynes, 1970, pp. 398–408).

However, since even the most ephemeral streams may have benthic biota, the Office believes that some reasonable level of biological community complexity should exist in streams before they deserve direct protection. The rule under Section 816.57(c) for determining "biological community" seeks to do this by eliminating from consideration most of the very small forms of stream biota which have brief, ephemeral lifespans, unless they are joined in the biota by longer lived, larger, and more complex forms of life which characterize the more permanent streams (Hynes, 1970).

(3) Section 816.57 protects stream channels, but contemplates that the regulatory authority may allow surface mining activities to be conducted within 100 feet of a perennial stream or a stream with a biological community adopted to flowing water for all or part of their lifecycle. Thus, if operations can be conducted within 100 feet of a stream in an environmentally acceptable manner, they may be approved. This concept does permit the use of erosion and drainage control measures near the channel, if approved by the regulatory authority.

The 100-foot limit is based on typical distances that should be maintained to protect stream channels from sedimentation. The 100-foot standard provides a simple rule for enforcement purposes, but the Office recognizes that site-specific variations should be

made available when the regulatory authority has an objective basis for either increasing or decreasing the width of the buffer zone. Under Section 816.57, an operator cannot mine through a stream covered by Section 816.44 (intermittent and perennial streams), unless it has been diverted around the area of disturbance in accordance with that Section.

(4)(a) Several commenters questioned Sections 816.57(a) and 817.57(a) as to which water bodies require buffer zones. A commenter pointed out that even ephemeral streams and dry washes are significant sources of water and sediment to larger streams within the watershed, and thus are in need of protection by buffer zones to preserve aquatic habitat downstream. Although this is true, the Act contemplates mining and associated activities to directly disturb minor stream channels, when it allows for sedimentation ponds (Section 515(b)(10)(B) of the Act) which have to be built in some sort of water drainage channel. The Office thus has to draw a reasonable line.

Surface mining is impossible without destruction of a number of minor natural drainages, including some ephemeral streams as defined in section 701.5. The Office, therefore, believes it is permissible to surface mine coal so long as a reasonable level of environmental protection is afforded.

(b) Several other commenters felt only perennial streams should require buffer zones. This would reduce operator cost and increase coal production from deposits underlying nonperennial streams. The Office believes that this alternative is illegal; however, because there are significant fish and wildlife resources in streams other than perennial streams that need protection under section 515(b)(24) of the Act. The Office rejected these alternatives and chose not to change the section, except to delete the term "macroinvertebrate biological community" and redefine and clarify the intent of "biological community." (See following discussion.)

The regulation by use of the term "biological community," seeks to protect biologically significant streams from direct disturbance, except in accordance with section 816.44. The more constant intermittent streams will usually have a biological community, but as streams become increasingly intermittent due to their climatic, geologic, and geographic location, the less likely it will be that they have a biotic community that fits within the definition of sections 816.57(c) and 817.57(c). The regulatory authority and the permittee can agree at the application stage where buffer zones need to be established, based on the fish and wildlife data required under section 779.20.

Perennial streams will almost always have a significant biota unless it has been eliminated by pollution. Use of this regulation will aid the restoration of previously damaged streams.

The buffer zone concept is equally applicable to impoundments (other than mine-related sedimentation ponds and waste impoundments), both natural and man-made. The Office is not promulgating a rule specifically calling for buffer zones at impoundments at this time, because buffer zones may be required by the regulatory authority near impoundments under the provisions of section 816.97(d).

(5) Several commenters questioned the width of the buffer zone. One requested restricting it to 100 feet in all cases, another to 200 feet. Two suggested allowing the distance to the discretion of the regulatory authority. The first two alternatives were rejected. A specific inflexible width is arbitrary, would not fit local situations, and could take significant coal reserves out of production without adding any better protection to the stream. The Office chose to make no changes to the regulation, as the 100-foot zone is a valuable general rule, but it is the intent of the Office that the width of the zone may be increased or decreased when there is justification for doing so, according to the findings of the regulatory authority. The Office believes that this is in accordance with the concerns in the other two comments.

(6) A State agency felt that State mining agencies may not have sufficient expertise to evaluate damage to streams, if buffer-zone exceptions are authorized. In particular, this commenter felt that the regulations should require those other State agencies which already have the necessary expertise to participate in decisions such as this. The Office feels that this can adequately be achieved by specific coordination requirements in State programs submitted for approval by the Secretary. Thus, for example, a State program could provide for approval by another agency within the State for those portions of the permit application dealing with buffer zones and for which the agency has sufficient expertise.

(7) Another commenter felt that buffer zones should be required only for streams known to have listed "threatened or endangered species" within their biota. The Office rejected this alternative, as section 515(b)(24) of the Act requires protection of all fish, wildlife, and related environmental values, using the best technology currently available. It would be illegal to protect only those streams with threatened or endangered species.

(8) Another commenter felt that section 816.57(a)(2) should apply only to water quality and not quantity. The Office rejected this alternative because it would be illegal under section 515(b)(10) of the Act. Also, changes in water quantity can have marked effects on water quality and availability of aquatic habitat, thereby adversely affecting fish and related environmental values of aquatic environments as prohibited by section 515(b)(24) of the Act. (*See* Hynes, 1970, chapters 3, 11, 21.)

(9) Several commenters asked that the section be deleted entirely, as being redundant relative to various other sections of the regulations. These comments have some merit and changes have been made in sections 816.44 and 816.97 to clarify the regulatory scheme.

However, the Office rejects the position that there is no need for a separate section dealing specifically with stream buffer zones. Streams are the crucial conduits of sediment pollution from mine areas, and a given stream section either has a significant biota or else eventually flows into a downstream area which has a significant and valuable biological community that is significant for human uses. Because of the significance of streams as features on the mine landscape, the Office believes that rules on how streams are to be treated and protected should be spelled out. Section 816.57 establishes the kinds of streams that have the level of biological significance that triggers direct protective measures. Section 816.44 prescribes how stream channels and stream water must be handled when diversions are justified. Other sections of the regulations dealing with sedimentation ponds (section 816.46), impoundments (section 816.49), rehabilitation of ponds and treatment facilities (section 816.56), and revegetation (Sections 816.111-114) are to be read in conjunction with the provisions of this section. The Office believes that the conflicts have been resolved.

(10) Several commenters made suggestions on the definitions of perennial, intermittent, and ephemeral streams which relate to sections 816.57 and 817.57. The reader is directed to section 701.5 and the preamble for a discussion of those definitions and a resolution of the comments.

(11) The definition for "macroinvertebrate biological community" was deleted because several additional commenters were confused by, and misconstrued, its concept. The Office redefined the term as "biological community." The concept is still retained, as discussed below, but is clarified by

redefining it as a rule within sections 816.57(c) and 817.57(c).

The definition of macroinvertebrate biological community was proposed by the Office in 43 FR 41805–41806 to be applied to buffer zones (Sections 816.57 and 817.57) and stream-channel diversions (Sections 816.44 and 817.44). Hydrologic discharge characteristics are the main criteria on which the definitions of ephemeral, intermittent, or perennial streams are based, but these discharge criteria do not directly relate to the ecological complexity of stream communities. (Hynes, 1970, chapters 3, 11, and 21; Gary, McAfee, and Wolf, 1974, pp. 233, 366, and 527.) Therefore, the buffer zone sections as proposed, used the macroinvertebrate biological community (MBC) definition to call for a special performance standard near streams that are either perennial or which have an MBC.

These biological significant streams may be diverted only under special circumstances by cross-reference to Section 816.44 in Section 816.57(a). Section 816.44 applies certain engineering criteria to the diversion of streams characterized as "intermittent" using hydrological considerations.

(12) Several commenters assumed that the MBC definition would cause the buffer zone sections (Sections 816.57 and 817.57) to apply to all ephemeral streams or "pools of stagnant water." These comments misunderstood the definition, which was specifically drafted to refer to true stream community organisms that need flowing-water conditions to complete their life cycles. These organisms are severely limiting in that they must be arthropods (insects, crayfish, and their kin) or mollusks (snails, clams, and their kin), and that they must be larger than 2 mm long while living in the stream. These criteria eliminate worms and hundreds of species of tiny arthropods and other small fauna which inhabit all streambeds, from the wettest to the dryest. (See Hynes, 1970, Chapter 21.) Even streams with summer pools containing fish that migrate upstream in the spring would not be included, unless a MBC also exists. For the more constant intermittent streams in wetter regions, a MBC will usually exist, but a MBC will very seldom exist in a truly ephemeral stream as defined in Section 701.5. In arid regions, many intermittent streams draining large areas will have no MBC (Hynes, 1970) and will thus be exempt from the buffer-zone regulations, although the stream-channel diversion regulations will still apply.

It is the intent of the Office that the use of the MBC indicator approach will better determine the streams worthy of special protection under the buffer-zone concept. It will necessitate a stream-fauna survey before a permit is granted, in those cases where it is unclear to the regulatory authority from available information on discharge ranges, maps, and from other sources, whether the stream segments within or bordering on the mine-plan area have a MBC. Such surveys are very simple, and the regulatory authority should have the expertise to make a determination based on the stream organisms found.

(13) A commenter suggested that some index of species diversity be used in the definition of a MBC. The Office believes that the mere presence of reproducing species is the most basic indicator of diversity. The definition has been carefully tailored to include a level of complexity indicative of a true stream ecosystem, on the basis of considerations discussed by Hynes (1970).

§ 816.59 Coal recovery.

This Section addresses two persistent problems of coal mining: (1) The loss of coal resources when mining does not recover all the coal at a particular mining site, and (2) recurrent environmental degradation when land is reopened for mining to recover the remaining coal. The regulation requires the operator to conduct mining operations to maximize resource recovery. This would be accomplished by mining all available coal at a minesite, which it is economically feasible to extract. It further requires operators to preserve environmental quality and to restore environmental balances after mining ceases. The authority for this Section is Sections 102, 201, 501, 503, 504, 510, and 515 of the Act.

(1) The Office considered but did not include specific language requiring the recovery of all coal economically feasible to be recovered from a site, because such a requirement would be too imprecise to enforce effectively and uniformly. The regulation as promulgated would be satisfied, however, by a demonstration by the permittee to the regulatory authority that all coal which is economically feasible to recover will be mined.

(2) The Office also considered requiring fixed percentages of recovery. The most commonly considered fixed percentages were 85, 90, and 95. These alternatives were not included for three reasons. First, it is difficult to define precisely the amount of coal existing at a site prior to mining, because of variable thickness of seams and partings, variable quality of the coal, and variations in depth of overburden. Second, health and safety considerations may preclude attainment of fixed percentages of recovery. Third, constant variation in thickness of seams, quality of coal, depth of overburden, and mining conditions would require a continuous monitoring and detailed ongoing exploration program which may be beyond the capability of the regulatory authority to undertake or oversee. All commenters on the fixed percentage of the proposed regulations provisions, and there were many, pointed out that the requirement would be inappropriate because the amount of coal that can be mined economically varies widely from place to place. The reader is referred to the Office's Regulatory Analysis for a discussion of the costs of these alternatives, which the Office considered in reaching its decision.

(3) A third alternative, requiring a separate list of cost variables and resource figures from the operator was also considered but not adopted. Public comment on the utility of requiring this information in permit applications, for use by the regulatory authority according to a fixed formula for determining economic feasibility of recovery, was overwhelmingly against such a requirement. The Office agrees with the commenters that such requirement would be impractical and incapable of uniform administration.

(4) One commenter suggested that recovery of small coal rider seams be made mandatory. The Office feels that coal recovery depends on the quality and thickness of a seam as these characteristics relate to economic recovery. Accordingly, the Office does not prohibit the spoiling of small rider seams in the course of economic recovery of major coal seams, so long as the maximum recovery economically feasible is achieved.

(5) A commenter suggested prohibiting the redisturbing of previously mined land for a period of 30 years as a means of insuring maximum recovery. OSM has rejected this suggestion, because this concept would foreclose, for 30 years, the introduction of new mining technology which could make mining of the remaining coal economic, while it might not have been during the initial period of mining.

(6) The reader's attention is directed to proposed regulations for determining recoverable reserves under a Federal lease, published by the U.S. Geological Survey July 10, 1978, (43 FR 19631). The Office understands the final version of these rules is soon to be published.

(7) Under the regulations published today, the regulatory authority would monitor the mining operations to assure that the operator is proceeding in compliance with the permit and with the determination of recoverable coal. Variations in recoverability may be necessary, where dictated by quality of coal resources, by health and safety considerations, by the geometry of the mine workings, and other factors.

(8) The language relating to environmental quality was added in re-

sponse to comments, with which the Office agreed, pointing out that the requirement for maximization of recovery should not be viewed as superseding other performance standards, but should be viewed as a requirement of equal importance to others in Part 816. The additional language places the regulation in perspective.

§§ 816.61–816.68 Use of explosives.

Introduction

These sections establish performance standards regulating the amounts, methods of use, timing, and monitoring of blasting in the course of conducting surface mining activities. The statutory authority for and general basis and purpose of these sections were explained in the preamble to the proposed regulations, 43 FR 41753–41758 (Sept. 18, 1978).

The fundamental purpose for these sections is to establish regulatory controls on the use of explosives and blasting agents used in surface mining activities, because of the great potential for damage to public health and safety and water resources that improper blasting can cause. Congress was well aware of these dangers when it enacted the Act, as was explained through a review of relevant portions of the legislative history in the preamble to the proposed regulations. To protect against these dangers, Congress required the establishment of rigorous regulatory controls, particularly under Section 515(B)(15) of the Act.

1. Regarding Congress' perception of the dangers that may occur from blasting in surface mining activities, some commenters criticized what they felt to be the Office's reliance on a report presented in 1977 to the House Subcommittee on Energy and the Environment by the Center for Science in the Public Interest (CSPI). This report's conclusions were briefly discussed in the preamble to the proposed rules.

These commenters felt that the Office should not utilize the CSPI report because of asserted inaccurate assumptions about the extent of blasting effects made by the authors of the report. The Office has carefully reviewed these comments and the report and has concluded that, while the report's quantitative estimates of annual damages from surface mining blasting are indeed open to debate, changes in the regulations are not needed on that basis. The CSPI report was described in the preamble to the proposed rules as material illustrating the basis for Congress' general concern with the adverse potential for blasting, because it contained reports of firsthand observations of the effects of blasting in surface mining activities. Those observations, rather than quantitative predictions in the report, were used by the Office. Those observations were not challenged by commenters. As a result, the Office notes that the CSPI study is entitled to some weight to generally illustrate that significant problems can occur, if blasting is not properly controlled.

2. Materials considered by the Office in developing these regulations include:

1. Ash, R. L. 1968, *The Design of Blasting Rounds*, pp. 373–396, Chapter in *Surface Mining*, American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc., New York, 1,061 pages.

2. Ashley, C., and Parkes, D. B., 1976, *Blasting in Urban Areas: Tunnels & Tunnelling* (British Tunnelling Society), September, 1976, pp. 60–67.

3. Barnes, Jack (John B.) 1977, *The Effects of Strip Mine Blasting on Residential Structures—Ayshire Mine, Warrick and Vanderburg Counties, Indiana.* Paper presented to the Indiana Academy of Science, Indianapolis, Indiana, October 28, 1977, 19 pp.

4. Coal Mine Health and Safety Act of 1977 and 71 CFR, Subpart D.

5. Committee on Hearing, Bioacoustics and Biomechanics, Assembly of Behavioral and Social Sciences, 1977. *Guidelines for Preparing Environmental Impact Statements on Noise*, 162 pp.

6. Dvorak, A. 1962, *Seismic Effects of Blasting in Brick Houses*, Geotysikalni Shornik, No. 169.

7. Grim, E. and Hill, R. 1974, *Environmental Protection in Surface Coal Mining* (U.S. Environmental Protection Agency, No. 1BB040).

8. Gustafsson, Rune 1973, *Swedish Blasting Technique*, SPI, Gothenburg, Sweden, 323 pp.

9. Kentucky Department of Mines and Minerals, 1977 *Laws and Regulations Governing Explosives and Blasting.* Lexington, Ky., p. 1.

10. Laadegard-Pederson and Dally, 1975, *A Review of Factors Affording Damage in Blasting*, National Science Foundation.

11. Maryland Geological Survey, Bureau of Mines, 1973, Blasting restrictions (08.06.05.09) and Regulations governing blasting (08.06.05), in Bituminous coal strip mines and auger regulations, Maryland Department of Natural Resources Rules and Regulations, p. 23.

12. Medearis, Kenneth, 1976, *The Development of Rational Damage Criteria for Lowrise Structures Subjected to Blasting Vibrations.* A Report of the National Crushed Stone Association, Kenneth Medearis Associates, Fort Collins, Colo., and Valley Forge, Pa., 94 pp. (duplicated report).

13. Miller, P. H. (no date), *Blasting Vibrations and Air Blast:* Park Central, Ill., Atlas Powder Co., 16 pp.

14. Nicholls, H. R., Johnson, C. F., and Duvall, W. I. 1971, *Blasting Vibrations and Their Effects on Structures.* U.S. Bureau of Mines Bulletin 656, 105 pp.

15. Old Ben Coal Company, Comments to Office of Surface Mining (1978).

16. Pennsylvania Department of Environmental Resources, Rules and Regulations, Title XXV, Pennsylvania Code, Ch. 211.

17. Research Energy of Ohio, Inc. Comments to Office of Surface Mining, 1978.

18. Siskind, D. E., 1977, *Structure Vibrations from Blast Produced Noise*, in 18th International Rock Mechanics Symposium, June 1977, Keystone, Colo.; Proceedings, pp. 1A3–1—1A3–5.

19. Siskind, D. E., Stachura, V. J., and Radcliffe, K. S. 1976, *Noise and Vibrations in Residential Structures from Quarry Production Blasting—Measurements at Six Sites in Illinois.* U.S. Bureau of Mines Report of Investigation RI 8186, 17 pp.

20. Siskind, D. E., and Stachura, V. J. 1977, *Recording System for Blast Noise Measurement.* Sound and Vibrations Journal, pp. 20–23.

21. Siskind, D. E., and Summers, C. R. 1974, *Blast Noise Standards and Instrumentation.* U.S. Bureau of Mines, Environmental Research Program, Technical Progress Report ("TPR 78").

22. Siskind, D. E. 1978, Bureau of Mines Special Study Submitted to OSM, 5 pp.

23. Tynan, A. E. 1973, *Ground Vibrations—Damaging Effects to Buildings*, Special Report No. 11, Australian Road Research Board.

24. University of Maryland, An Investigation into Delay Blasting 1975, NSF Contract APR 75–05171 to the University of Maryland and Subcontract No. M–218907 to Martin Marietta Laboratories.

25. Duvall, W. J. Devine 1968, Air Blast and Ground Vibration from Blasting. pp. 398–411. Chapter in *Surface Mining.* American Institute of Mining, Metallurgical, and Petroleum Engineers, Inc., New York, 1,061 pages.

26. Grubb and Ryder, 1972, and

27. USGS, 1974 (a), vol. 1.

3. Several of the materials were criticized by one commenter as being inappropriate for use by the Office as the basis for some or all of Sections 816.61–816.68. In part, this comment was based on the presentation in the preamble to the proposed rules (43 FR 41753), that the Office "used" the cited materials to "develop" Sections 816.61–816.68, thereby indicating that

the Office was relying upon each source listed in the Preamble as justification for the proposed rules. In fact, the Office considered all of these sources, but found justification for the proposed rules in only some of them. Those that were believed to justify the regulations were discussed in portions of the preamble to the proposed rules related to particular sections of the regulation.

For the final rules, the Office has listed above all materials considered. That literature which provides the actual basis for particular sections of the regulations questioned by commenters is cited in succeeding portions of this preamble. The Office has also specifically considered the criticisms of the commenter who questioned the applicability of several articles listed in the preamble to the proposed rules—

(a) The Medearis study was consulted frequently by the Office in the preparation process, as is indicated by frequent citations in the final preamble. While the Office did not, as explained below, feel that the structural response technique proposed by Medearis is adequately developed for the purpose of adoption in these regulations (as an alternative to the peak particle velocity ground vibration limitation) the report does contain a considerable amount of useful information in other areas.

(b) The Siskind paper, "Structure Vibrations from Blast Produced Noise," points out that significant structure vibrations can be produced by airblast alone and that an airblast criteria based on damage should be considered. The specific data in the paper were not used as a basis for the final regulations. The noise decibel limits of Section 816.65 were derived, instead, from a special study done for the Office by the U.S. Bureau of Mines and from comments of a State agency.

(c) The Siskind and Stachura paper, "Recording System for Blast Noise Measurement," provided background information essential to the understanding of airblast recording systems. It contained no data which were directly used in support of a quantitative limit in the final regulations.

(d) The Atlas Powder Company brochure, "Blasting Vibration and Airblast," contained no data other than that contained in Bureau of Mines Bulletin 656 and TPR 78. It did, however, show that a major powder company considers Bureau of Mines publications as authoritative sources. Since the Bureau work contributed heavily to the regulations, it was important to know that industry has confidence in Bureau work. This is clearly shown by Atlas' preparation of a users' pamphlet based primarily on Bureau work.

(e) Bureau of Mines TPR 78, "Blast Noise Standards and Instrumentation," contained a good deal of background on airblast reduction techniques, some typical airblast levels measured on various instruments, and general recommendations. Although TPR 78 was used as a basis for the 128 dB standard in the interim regulations (see 30 CFR 715.19), the final standard was based on the special Bureau of Mines study. TPR 78 did, however, provide much of the rationale for parts of the airblast regulation, as indicated by frequent citations in the final preamble.

(f) The Ashley and Parkes reference was not relied upon in developing the vibration standard. Although not a study involving original research, it does present reasoned opinion, based on experience of the authors, that the one-inch-per-second peak-particle velocity standard is reasonable. This paper is an example of one which was considered, but which did not weigh heavily on the writing of any particular section of the regulations.

(g) Bulletin 656, "Blasting Vibrations and their Effects on Structures," was frequently used in the writing of the regulations. The data on propagation of blast vibrations was especially useful. The scaled distance formula requirement of Section 816.65 was also developed from that publication. Bulletin 656 stated that the two-inch-per-second criterion will keep the probability of damage below five percent. However, as explained further below, because of the inadequacy of a two-inch standard and information in several other technical reports (references 5, 6, 8, 12, and 13) the one-inch-per-second criterion was adopted in the final rules. The Office agrees with the statement that a scaled distance of 50 will protect against vibration of two-inches-per-second. The same graphs used for that conclusion support the use of a scaled distance of 60 to protect against vibrations of one-inch-per-second.

(h) RI 8168, by Siskind, Stachura, and Radcliffe, gave an insight on the correlation between structure vibrations induced by ground vibrations and airblast. No recommendation as to damaging levels from blasting was made. This publication merely gives background information on the technology and was not specifically used in writing the regulations.

(i) The preamble to the interim regulations referred to studies by the National Coal Board as part of the rationale for a one-inch-per-second limitation. This information was not used as a basis for the one-inch-per-second limitation in the final regulations and has not been incorporated in the list of references.

(j) The Barnes study, "The Effects of Strip Mine Blasting on Residential Structures . . ." has been criticized by many commenters. It was considered in the writing of the regulations, because it demonstrates the annoyance of the public that can result from blasting conducted at a large surface coal mine. Because the explanation in the Barnes study of causes of much of the damage observed was subject to qualification because of the lack of pre-blasting data, the study points out the desirability of preblast surveys. This report was not, however, directly used in the writing of the final regulations.

(k) The Research Energy of Ohio comments to the Office were used to show that an alternative to traditional delay detonators exist for reducing peak particle velocities and to indicate that the industry can meet the one-inch-per-second standard. The use of these materials with respect to delay detonation is to allow for the only alternative that may be available for some operators who want to blast at very close distances to structures, i.e., within 300 to 1,000 feet.

(l) The University of Maryland, "An Investigation into Delay Blasting," describes inaccuracies in firing times of commercial electric blasting caps which have been known for a long time. The commenter stated that these inaccuracies cast doubt as to the ability of operators to meet the one-inch-peak-particle-velocity limitation, by using a scaled distance equation based on eight-millisecond delay intervals. However, the scaled distance studies described in Bulletin 656, upon which the Office's scaled distance formula in the final rules is based, were empirical studies employing standard commercial detonators which would have the inaccurate firing times described by the commenter. Thus, those empirical studies accommodate and account for the inaccuracies described by the comments.

The University of Maryland publication itself was used only to justify Sections 816.65(o) and 817.65(p) in the proposed regulations, which required regulatory authority permission to use combination surface-in-hole delay systems. In response to heavy comment objecting to this requirement, with which the Office concurs, it has been deleted. Thus, the University of Maryland study was not used to directly support any of the final rules.

§ 816.61 Use of explosives: General requirements.

1. A few commenters proposed that over 50 safety-related items be included in Sections 816.61 and 816.65 as operating standards. These suggested additions would cover the transportation, storage, and use of explosives. A

study of these comments indicated that these items should not be included in the final rules.

Examination of the suggestions showed that they apply mostly to the safety of workers; commenters did not indicate how the inclusion of these provisions would increase the safety of the public. All but one of the proposed additions to the rules were either already adequately covered by the Office's rules or were covered by regulations of the U.S. Mine Safety and Health Administration (MSHA) or the Federal Bureau of Alcohol, Tobacco, & Firearms (ATF).

Because MSHA has primary responsibility for the safety of workers and ATF has primary responsibility for the storage of explosives to protect the public, inclusion of these provisions in the regulations would be an unnecessary duplication. The exception is the lack of a provision to regulate the use of two-way radios in the vicinity of explosives. MSHA has advised the Office that the use of two-way radios has never been known to cause an accident and that estimated costs of requiring those throughout the industry would be $4,000,000, a cost that would appear not to be justified.

II. To avoid redundancy by Federal agencies in inspection and enforcement, and to stay within the authority of the Act, deletions were made from proposed Section 816.61(a). The proposed regulation required compliance with all applicable local, State and Federal laws and regulations *and* the requirements of Sections 816.61–816.68 in the storage, handling, preparation, and use of explosives. The section was changed to require compliance with all applicable State and Federal laws in the use of explosives. As compliance with all sections of the regulations is independently required, the reference to Sections 816.61–816.68 was deleted.

The Act in section 515(b)(15) requires the Office to "ensure that explosives are used only in accordance with existing State and Federal law and the regulations promulgated by the regulatory authority . . ." The Act does not mention local law. In many cases it will not be necessary for inspection personnel of the Office to determine all the laws which may be applicable in the numerous municipalities and counties within their assigned geographical areas, because those governmental bodies will enforce those provisions directly. Therefore, reference to local laws and regulations has been deleted.

Further, the Act mandates that the Office "ensure that explosives are *used* only in accordance with State and Federal law . . ." (emphasis supplied). Traditionally, the "use" of explosives has been differentiated in State and Federal regulations from the processes of manufacture, transportation, and storage, such as is done in MSHA regulations. See 30 CFR 55.6–1, 55.6–40, 55.6–90, 77.1300, 77.1301, 77.1302, 77.1303. Inspection by personnel of the Office to ensure compliance with all Federal and State laws pertaining to storage, preparation, and handling of explosives is not required of the Office by the Act under Section 515(b)(15). These aspects are presently sufficiently regulated by other Federal and State agencies, such as ATF, MSHA, and the U.S. Department of Transportation. Therefore, the reference that appeared in the proposed regulations pertaining to the storage, handling, and preparation of explosives has been deleted.

III. *Section 816.61(b).*

A. Several individuals and groups objected to the use of "the equivalent of five pounds of TNT" in the proposed rules as being confusing, since no mining operation uses TNT, the limit was too low, or the regulation was ambiguous. Based on the comments received, the following alternatives were considered and alternatives (2) and (5) were adopted.

(1) Retain the specification "the equivalent of five pounds of TNT" as written in the proposed permanent rules.

(2) Substitute in Section 816.61(b) the phrase "five pounds of explosive or blasting agent."

(3) Increase the weight to "250 pounds of explosive or blasting agent."

(4) Define the term "explosives" in the regulations.

(5) Do not further define the term "explosives."

B. A few commenters felt that the specification in the proposed rule of "the equivalent of five pounds of TNT" was ambiguous and confusing. "TNT" is used for military operations, not industrial blasting. One of these commenters recommended that the Office define *explosives.* Another commenter asked for clarification at to whether OSM means five-pounds-per-blast or five-pounds-per-delay, and recommended specification of five-pounds-per-delay. Another commenter suggested that the minimum weight be increased to 250 pounds, and that a provision be made for exempting unscheduled detonations in case of misfire, wet holes, or other instances.

The comments on the ambiguity of the "TNT" specification are correct, so the Office has replaced the phrase "the equivalent of five pounds of TNT" by "five pounds of *explosives or blasting agents.*" A similar change was also made in Section 816.64(a) of the final regulations. "Explosives or blasting agents" covers the range of products used for industrial blasting. Since both "explosives" and "blasting agents" are widely accepted terms for many specific types of detonable materials, and the definitions are common knowledge to those engaged in surface mining activities, no specific definition in the regulations is necessary. Of course, State regulatory authorities may adopt specific definitions, if those definitions cover *all* types of detonable materials used for blasting in surface mining activities in the particular State.

C. As proposed, Section 816.61(b) clearly stated that the rules apply to "blasting operations that use more than five pounds. . . ." However, to eliminate any possible confusion, the term "blasting operations" has been changed to "blasts." Therefore, all "explosives and blasting agents" used in a particular blast will be aggregated to determine if these regulations apply. The Office clearly does not mean that the regulations should be applicable on the basis of five pounds "per delay."

The recommendation to increase the minimum charge specifications to 250 pounds was not accepted. First, this comment merely asserts, without providing supporting data, that blasts containing up to 250 pounds of explosive can be conducted safely. Second, (Ref. 14) Bureau of Mines Bulletin 656, p. 66, Figure 5.1, shows that even 27 pounds of explosive fired unconfined at a distance of 900 ft. will yield an airblast with overpressure of approximately .08 pounds per square inch, or 150 decibels, an unacceptably high level far in excess of the maximum allowable levels for blasting needed to protect the public. (See Section 816.65(e) and the literature cited in this preamble to support the maximum decibel levels.) Thus, if blasts at 27 pounds can produce overpressure far in excess of allowable limits, the Office believes that establishing the minimum level for application of these regulations at five pounds is desirable to ensure that blasting is conducted, as required by the Act, to adequately protect the public. See Section 515(b)(15) of the Act.

D. Finally, the Office has also decided not to adopt a special exception from the blasting schedule warning requirements for misfires and for other reasons that lead to explosives failing to fully detonate. Such an exception is unnecessary, if the need for additional blasting to replace misfires and wet holes is accounted for and described with particularity in the original blasting schedule. For example, if the schedule describes that blasting will occur at 2–3 p.m. on X date, then re-blasting at 3 p.m. for misfires occurring at 2 p.m. will have been properly described in the schedule. It is noted, however, that re-blasting occurring at times or under conditions not specified

in the blasting schedule would not be allowed, because then the public will not have received the adequate warning required by Section 515(b)(15) of the Act.

IV. *Section 816.61(c).* Several commenters questioned the specification in the proposed rules of persons requiring blaster certification and personal characteristics of persons handling explosives. As a result, the Office revised Section 816.61(c) to eliminate reference to personnel characteristics of persons handling explosives and to retain only the requirements that blasting operations be conducted by certified blasters.

Adequate requirements for certification of blasters will be provided in detail in 30 CFR Part 850. Therefore, it is redundant to specify other requirements for certification of blasters in Section 816.61(c). It is sufficient in this section to provide that all blasting operations be conducted by certified blasters. Several commenters stated that is is unreasonable to certify all persons using explosives. These comments will be considered in the revision of proposed 30 CFR 850.

Section 816.62 Use of Explosives: Preblasting survey.

Section 816.62(a). (A) Numerous comments were received relative to when, where, how, and by whom the preblasting survey should be conducted. A review of the comments resulted in consideration of the alternatives listed below. Alternatives three and four were adopted by the Office.

1. Retain the section as it appeared in the proposed regulations.

2. Set a definite time limit for submission to the regulatory authority of the preblast survey report, when completed.

3. Amend the proposed regulation to require "prompt" responses to the request for the survey and submissions of the report to the requestor and the regulatory authority.

4. Amend the proposed regulation to add provision for a supplemental preblast survey, if there have been renovations or additions to a surveyed structure after the original preblast survey.

5. Amend the section to extend the area of preblast survey beyond one-half mile of the permit area.

6. Amend the section to require that the preblast survey state the causes of existing, preblasting structural damage.

7. Amend the section to require that requests for preblast surveys be made in writing.

8. Amend the section to require that the blast schedule providing notice of the right to a survey be mailed to all residents within one mile of the permit area and include a map showing the permit area.

B. *Analysis of Comments and Alternatives*

Alternatives 2 and 3. Numerous comments were received relative to setting a time limit on completion of the preblast survey and submission of the report. The Office rejected the alternative of setting a specific time limit, in days, for the initiation of a preblast survey report and, instead, adopted the alternative of requiring both "prompt" responses to the request for surveys and "prompt" submission of survey reports to the regulatory authority. This alternative will further the purposes and requirements of the Act to ensure that preblast surveys be completed in a reasonable time prior to blasting, at the same time leaving flexibility to the regulatory authority to administer preblast survey requirements to fit local needs and workloads.

Alternative 4. A few commenters recommended that provisions should be made for a supplementary preblast survey, where renovations or additions have been made to a structure after an initial preblast survey has been made. The Office accepted this recommendation. The Act, Section 515(b)(15)(E), mandates that, if requested, a preblast survey be conducted of any structures within one-half mile of the permit area. Additions to a structure after the survey become portions of the "structure" that have not been surveyed and, therefore, should be covered in a supplementary survey. Renovations of a structure can substantially change its features, so that a preblast survey conducted prior to the renovation will no longer be representative of the structure for the purposes of analyzing the effects of blasting on the structure.

Alternative 5. Several comments were received relative to extending the area for preblast surveys beyond one-half mile of the permit area. The Office considers the one-half mile zone required by the Act as adequate for most circumstances. At a 0.5 mile (2,640 feet) distance, based on the scaled distance formula presented in 30 CFR 816.65(m)–(1), more than 1,900 pounds of explosives can be detonated within any eight-millisecond time period, without the maximum peak-particle velocity of the ground vibration exceeding one inch per second. Similarly, at a distance of 0.6 mile (3,168 feet), over 2,700 pounds of explosives can be detonated without the peak-particle velocity exceeding one inch per second.

Therefore, at distances greater than one-half mile, a mining operator should not experience difficulty in designing blasts that will not exceed the quantities as allowed by the scaled distance formula. Furthermore, Gustafson, p. 221 (Ref. 8), states that when ground vibration control is to be supplemented with preblast surveys, the extent of the area subjected to preblast inspection is usually within one-half mile of a blast site. The Office did not, therefore, extend the area of preblast surveys. However, under Sections 503, 504, and 505 of the Act and 30 CFR 700.3(c), 730 and 736, the regulatory authority may extend the area beyond one-half mile from the permit area, if local situations require.

Alternative 6. Several commenters recommended specifying that the preblast survey include analyses of the causes of existing preblast structural damage, while another commenter recommended that persons who conduct surveys make no comments either during the survey or within the survey report, concerning possible causes of any damage noted during the survey. The Office did not adopt either of these recommendations. The final regulations neither absolutely preclude nor require such information in the survey report.

In some cases the permittee may choose to have the causes of existing structural damage determined in a preblast survey. However, such determinations need not be made in all cases, because it would require detailed engineering analyses incompatible with the general purpose of the survey, which is to quickly document that damage exists and to compare that record as blasting proceeds.

The Office did not adopt the recommendation to prohibit the surveyor from making comments during the survey. This would be contrary to an objective of the preblast survey as stated in the preamble to the proposed regulations, to increase communication between the mining entity and the public about blasting operations. Further, the surveyor may in some cases be able to provide opinions or information which could be of value to the requestor, by explaining the cause of existing damage present at the time of the survey.

Alternative 7. A commenter recommended that requests for a preblast survey be made in writing and that the person making the request state the specific conditions of the structure to be surveyed. The Office did not adopt this recommendation, because the stated purpose of the recommendation, which was to limit the number of requests for the preblast survey, was contrary to the purposes of Section 515(b)(15)(E) of the Act. That provision broadly provides for surveys and for the surveyor, rather than the requestor, to evaluate existing conditions of structures. Moreover, requiring written requests would prejudice persons with limited writing abilities in invoking the protection of the Act.

Finally, a preblast survey is not an investigative or adjudicatory proceeding, requiring that written allegations be made to trigger the initiation of regulatory procedures.

Alternative 8. A commenter recommended that the blast schedule be mailed to all residents within one mile and that a map showing the permit area be included with the schedule. The Office did not adopt these recommendations, because a precise description of the permit area is already required to be published in local newspapers under 30 CFR 786.11, and residents beyond a distance of one-half mile from the permit area can reasonably be expected to have adequate notice of the blasting schedule by its publication in the local newspaper.

II. *Section 816.62(b) Survey Personnel.* A. Numerous comments were received relative to the personnel specifications in the proposed rules for conducting preblast surveys. A review of the comments resulted in consideration of the alternatives listed below. The Office adopted alternative 5.

1. Retain the section as it appeared in the proposed regulations.

2. Amend the regulation to give property owners and residents within one-half mile of the permit area the right to agree to the persons conducting the preblast surveys and/or the right to have their own candidates perform surveys.

3. Establish specific approval criteria for preblast surveyors and have the regulatory authority approve all those permitted to perform such surveys.

4. Establish only one criterion: preblast surveyors must not be employed by operator.

5. Delete requirement for regulatory authority's approval of persons conducting preblast surveys.

B. *Analyses of Comments and Alternatives*

Alternative 2. The Office did not adopt this recommendation as it would make it too difficult to conduct prompt surveys, contrary to the purposes of the Act. Also, it is in the permittee's interest to have a thorough survey performed when requested, as it will serve as a baseline of damage existing at the time of the survey. Furthermore, the public can retain its own consultants, if necessary, for conducting surveys.

Alternatives 3, 4, and 5. Several comments were received recommending against allowing the use of personnel employed by the mining industry to conduct preblast surveys, while several other commenters asserted that use of industry personnel should be allowed.

As stated in the preamble to the proposed regulations, one of the objectives of the survey is to increase communication between the mining entity and the public about blasting operations including discussions about how operations are conducted and how they may be modified, if necessary, to prevent damage. Use of personnel employed by the mining operators to conduct preblast surveys facilitate this objective.

The second objective of the preblast survey is to provide for the establishment of a preblasting record of the existing conditions of structures. The survey will provide a baseline record against which the effects of the mining-related blasting can be assessed. As it is to the operator's advantage to obtain a thorough preblast survey, it is not necessary to burden the regulatory authority and the industry with the requirement of approval of specific personnel conducting preblast surveys, because the operator is likely to use competent persons to conduct the survey. In addition, requiring prior approval of specific survey personnel would necessitate the establishment of comprehensive, job-related approval criteria, a scheme beyond the scope of this rulemaking.

The requirement in the proposed regulations for regulatory approval of personnel conducting the surveys was, therefore, deleted.

III. *Preblast Survey Methodology.* A. Recommendations as to the specific details of the conduct of preblast survey required by the rules were made by several commenters. Based upon a review of the comments, the alternatives listed below were considered. The Office adopted alternative 1. The Office may also prepare guidance manuals concerning the content of the preblast survey, if future experience indicates a need.

1. Retain the subject section as published in the proposed regulations.

2. Require that the subject of structural fatigue, due to blasting, be included as part of the preblast survey report.

3. Require that information be provided in the report on a specific minimum list of items.

4. Require that a photographic record, with copies of the photographs, be provided to the regulatory authority and to the survey requestor.

B. *Analyses of Comments and Alternatives*

Alternative 2. A commenter recommended that the subject of structural fatigue due to blasting be a required item to be considered in each preblast survey. The Office did not adopt this comment as the current state-of-the-art indicates that structural fatigue is not a factor in blast damage. (Medearis, Ref. 12, p. 84).

Alternative 3. A comment was made that information be required on specific minimum items such as cracks in foundations, water leaks, mortar cracks, loosened gutter nails, and columns out of location. The Office did not adopt this recommendation, as it is in the self-interest of the mine operator that the preblast survey accurately reflect the condition of the structure at the time of the survey.

Alternative 4. Another commenter recommended that a photographic record of the structure be required as part of the survey report. The Office did not adopt the recommendation, because photography is not the only method of establishing the condition of structures. Verbal, textual descriptions are an acceptable alternative.

IV. *Section 816.62(c).* (A) Numerous comments were received on the requirements for a written report of the survey. A review of the comments resulted in consideration of the alternatives listed below. The Office adopted alternative 2.

1. Amend the proposed regulations to substitute the word "may" for "shall" in the requirement that ". . . the report shall include recommendations . . ."

2. A requestor of the preblast survey should be allowed to file objections to the report with the regulatory authority.

3. A requestor of the preblast survey should approve the survey or include comments on it, before the survey report is submitted to the regulatory authority.

4. Amend the section to require the regulatory authority to approve, disapprove, or modify any recommendations contained in the survey report regarding the blasting plan, within a specified time period.

(B) *Analyses of Comments and Alternatives*

Alternative 1. The Office did not adopt alternative one, because, as many commenters pointed out, the principal objective of the survey is to record existing levels of damage. The professionals who are competent to perform that work are not necessarily qualified to make recommendations concerning blasting itself.

Further, as was explained in the preamble to the proposed regulations, examination of relevant technology thus far has revealed no current, reliable methods for routinely determining the condition of structures in terms of resistance to vibration of structural and nonstructural elements, prior to blasting. Therefore, analyses regarding proposed blasting operations may not be possible in all cases, as part of the preblasting survey.

Alternative 2. Alternative two was adopted because the requestor of a survey should have the right to comment to the regulatory authority concerning specific objections to the report of the preblast survey, so that the regulatory authority's limited surveillance capabilities of surveys are

complemented and so that potential disputes between the permittee and the affected public may be resolved prior to blasting events. In that regard, the Office determined that the public would not be sufficiently protected by the right to file complaints under the inspection and enforcement provisions of Sections 517 and 521 of the Act and Subchapter L, because that process is intended to provide a remedy for problems that have already resulted, whereas the purpose of complaints on a preblasting survey is to prevent adverse effects prior to their occurrence.

Alternative 3. The Office did not adopt recommendations by commenters that the requestor of the survey must approve the survey report or include comments therein, *before* the survey report is submitted to the regulatory authority. Requiring approval of the report prior to its submittal to the regulatory authority would result in considerable delay of the report's submission. Further, it appears to the Office that approval of the report by the requestor might not serve a meaningful purpose, where the requestor was reviewing a report containing detailed technical information difficult for lay persons to understand. As an alternative, the Office has decided that the right of the requestor to comment on the report as provided for in alternative two will provide adequate protection, because the requestor will have had an opportunity to independently consult with appropriately qualified persons, if necessary, prior to filing objections.

Alternative 4. The Office did not adopt the recommendation of a few commenters that, within a specified time period, the regulatory authority shall in all cases approve, disapprove, or modify any recommendations regarding blasting that are contained in the survey report. It is the responsibility of the permittee, in the first instance, to conduct operations to avoid damaging property. Therefore, it is the permittee's primary responsibility to either implement or reject the recommendations. Requiring regulatory authority approval in all cases of recommendations in preblast survey reports would also be inconsistent with the purpose of the survey, which is to expeditiously provide a baseline reservoir of data on existing damages to structures.

Of course, there are instances where this consideration may be outweighed by the need for a regulatory authority to carefully scrutinize proposed blasting operations prior to blasting, such as where restrictions of Section 816.65(f) or where the peak-particle velocity limit needs to be set below one inch per second, to protect sensitive structures under Section 816.65(i). In those instances, scrutiny of the preblast survey report, together with other relevant data, is needed because of the greater probability of adverse effects from blasting and also because, ordinarily, examination of those matters will not have occurred during the permit application review process, as is explained in the preamble to 30 CFR Section 780.13.

§ 816.64 Use of Explosives: Public notice of blasting schedule.

816.64(a)(1). *Blasting Schedule Publication*

A. Several commenters objected to the provisions in the proposed regulations requiring the mining operation to publish its blasting schedule in a local newspaper at least 10 days, but not more than 20 days, prior to blasting. A review of the comments resulted in consideration of the alternatives listed below. Alternative 1 was adopted by the Office.

1. Retain Section 816.64(a)(1) as proposed.

2. Allow publication of the blasting schedule at the same time that notification of the filing of the permit application is published.

3. Do not require public notification of the blasting schedule and delete Section 816.64(a)(1).

4. Delete the requirement for publishing the blasting schedule in a newspaper, but retain the requirement for notification by mail.

5. Require notification of the blasting schedule only in "heavily populated areas."

B. *Analyses of Comments and Alternatives.*

Alternative 2. One commenter stated that the permittee should be allowed to publish the blasting schedule at the same time as the notice of the filing of the permit applicaton is published in a newspaper under Section 513(a) of the Act and 30 CFR 786.11. The commenter reasoned that, since it is impossible to predict when a permit to mine will be granted, rerunning the newspaper notice and performing the mailings within the proposed rule's prescribed time would be very difficult to predict.

If this comment were adopted, the schedule published at the time of the filing of the permit application would be likely impossible to predict since it would not be known when the permit would be granted and, therefore, the applicant could not publish with reasonable specificity the date when blasting was planned to start. Moreover, as is explained in detail in the preamble to 30 CFR 780.13, permit applications will ordinarily not contain detailed information on proposed blasting activities. Hence, the applicant will not have the data available at that point with which to sufficiently warn the public. Alternatively, the operator can be specific, after the permit has been issued and before publishing the blasting schedule, so as to adequately warn the public of when blasting, in fact, will be conducted.

Alternative 3. It was asserted by a commenter that publication of the blasting schedule is unnecessary and dangerous to mine personnel who might rush operations to meet the schedule. Publication of the blasting schedule is required by Section 515(b)(A) of the Act and the schedule can be planned in accordance with Section 816.64(b) of the regulations so that it does not increase the danger to mine personnel, by selecting certain periods during several hours of the day for detonations of the blasts. If a case did occur that a blast was not ready to be detonated at the time originally anticipated, it could be detonated during the next scheduled detonation period.

Moreover, Section 816.65(a) of the final rules allows for detonations to be made in deviation from the schedule published in the newspaper, under carefully prescribed circumstances, to avoid a safety hazard to workers. Finally, Section 816.64(a)(1) does not prohibit loading of blasts at any time during the daylight hours; the schedule requirement refers only to periods of time when detonations are actually conducted.

Alternative 4. Another commenter agreed with the notification of the blasting schedule by mail, but objected to the requirement of publishing the notice in the newspaper. Section 515(b)(15)(A) of the Act, however, specifically requires publishing the schedule "in a newspaper of general circulation in the locality." Further, persons traveling through an area near blasting need to be aware of the times of blasting through newspaper notices, in addition to residents of those areas notified by mail.

Alternative 5. One commenter agreed with requiring public notice of the blasting schedule in heavily populated areas, but objected this was impractical in remote areas. The Office decided not to modify the regulation. Notification in remote areas will require considerably less effort to conform with the Act, due to the probability of fewer residents within one-half mile of the blasting site who require notification by mail. In any event, the Act requires notification without regard to the density of population in the areas involved.

Section 816.64(a)(2)

A. Many comments were received on details of the mailing of the blast schedule and notification of how to request a preblast survey to owners and residents within one-half mile of the

blast site. A review of the comments resulted in consideration of the alternatives listed below. Alternatives 3 and 4 were adopted by the Office.

1. Retain Section 816.64(a)(2) as proposed.

2. Change "permit area" to "blasting site."

3. Restrict the meaning of "permit area".

4. Add a provision to Section 816.64(c), eliminating the requirement for preblast survey information in change notices.

B. *Analyses of Comments and Alternatives.*

Alternatives 2 and 3. Several commenters pointed out that Section 515(b)(15)(a) of the Act provides that residents within a half mile of the "blasting site" will be notified by mail of the proposed blasting schedule. However, Section 515(b)(15)(E) of the Act provides that any resident or owner of a structure within one-half mile of the "permit area" is entitled to a preblast survey. The Office takes these areas to be essentially the same, when viewed over the total permit term of a mining operation, realizing that the actual location of each successive blast within a permit area will necessarily differ from the preceding blast at a given point. Changing "permit area" as in the proposed rule to "blasting site" would, therefore, not accord all persons entitled to the preblast survey notice of their rights established under Section 515(b)(15)(E).

However, there are certain types of support facilities used routinely in surface mining activities which do not require the use of blasting. Notification of proposed blasting need not ordinarily be given to persons who reside or own property adjacent to such areas. Thus, Section 816.64(a)(2) was modified in the final rule, to clarify the applicability of the notification requirement with respect to the permit area.

Several commenters also recommended deletion of notice of rights to request a preblasting survey in the copy of the schedule mailed to residences within one-half mile of the permit area, alleging that this is expensive and will generate frivolous survey requests. Another commenter suggested adding notice of the right to request a survey to the newspaper notice. The Office decided to reject both sets of comments. Section 515(b)(15)(E) of the Act provides a right for a preblast survey upon request. To implement that right and to ensure that the public is adequately informed (Section 102(i) of the Act) of its rights, the Office is requiring that notice of these rights be made by mail to the persons involved. Newspaper notice, on the other hand, would duplicate notice by mail and could generate survey requests by persons outside the one-half mile zone.

Alternative 4. One commenter pointed out that the requirement to publish changes in areas on schedules of blasting would also require renotification of all residents and owners within the area of a right to a preblast survey. Since the purpose of the preblast survey is to provide baseline data, additional surveys are unnecessary, unless the structures or facilities studied have changed. Section 816.64(c) was revised in the final rules to eliminate requiring information relative to preblast surveys to be included in mailed notices of changes in blasting schedules, when notices previously mailed to the owner or resident have already supplied that information.

Other Comments. A commenter recommended that the regulations be amended to provide that the blasting schedule be submitted to the regulatory authority. This comment was not adopted, however, because the schedule will have to be retained by the permittee and made available for inspection in order to know when republication is necessary. Of course, if individual States desire such information, such a requirement can be included in their regulations.

Another commenter felt that special notification conditions are necessary in Alaska. Section 708(d) of the Act and 30 CFR 731.13, 736.22(a), 741, allow for the regulations to be modified to fit the special conditions of Alaska. Such modifications are not, however, within the scope of the instant rulemaking.

Section 816.64(a)(3).

A. Several comments were received concerning the provision of the proposed regulations that required renotification by the permittee of its blasting schedule every three months. A review of the comments resulted in consideration of the 3 alternatives listed below; alternative 3 was adopted.

1. Delete the requirement for renotification.

2. Retain the provision as proposed.

3. Retain the requirement for renotification, but lengthen the time period beyond three months.

B. (1) Several commenters recommended deleting this subsection in its entirety, arguing that the Act does not explicitly require renotification of blasting schedules. These commenters alleged that renotification is an unnecessary cost, with one commenter citing $1,800 as a median cost to prepare, copy, publish, and distribute the schedule. Another commenter recommended that the section be changed to provide for an original notification covering the expected life of the mining operation, and to republish and redistribute the schedule only in the event that life of the operation is extended beyond that noted in the original schedule. Section 515(b)(15)(A) of the Act requires the regulatory authority to promulgate regulations that will include provisions:

> . . . to provide *adequate advance-written notice* to local governments and residents who might be affected by the use of such explosive, by publication of the planned blasting schedule in a newspaper of general circulation in the locality and by mailing a copy of the proposed blasting schedule to every resident living within one-half mile of the proposed blasting site . . . prior to blasting. (*emphasis added*)

There will be persons who will begin to travel or work in or move into the area around permitted operations only *after* the original notification of the blasting schedule. Therefore, renotification of some frequency is needed so that those persons are given the "adequate advance written notice" required by the Act. Further, as the comments on the proposed blasting plan portions of the permit regulations (30 CFR 780.13) showed, highly detailed predictions of blasting operations cannot ordinarily be given several years in advance of conducting those operations. Thus, renotification of blasting schedules will be needed on, at least, approximately annual frequencies as detailed information on blasting becomes available to the permittee.

Renotification of the blasting schedule at least every 12 months can reasonably be expected to keep the populace adequately notified and aware of the blasting schedule and sufficiently reduce the expense that would have been needed to comply with the proposed regulations. By lengthening the maximum time period from three to 12 months, small mining operations, where necessary blasting can ordinarily be completed within 12 months, will be spared the expense of renotification of the blasting schedule, unless changes in operations are made during the 12-month period.

Section 816.64(b)(2)(ii)

A. Numerous comments were received relative to the provisions of the proposed regulations limiting blasting to periods not exceeding an aggregate of four hours in any one day. A review of the comments resulted in consideration of four alternatives; alternative 1 was adopted by the Office.

1. Retain "aggregate of four hours" as published in the proposed regulations;

2. Change to "aggregate of eight hours;"

3. Change to "between Sunrise and Sunset;"

4. Delete the last sentence of the section, i.e., allow blasting throughout the day, without limitation on the length of the time periods.

B. Numerous commenters objected to the aggregate of four hours as promoting unsafe operations, principally on the theory that blasters would be rushed to meet a certain specific time period, causing mistakes in detonation which would be dangerous. These comments, however, were based on misinterpretation of the regulations, which require only that ". . . such periods shall not exceed *an aggregate of four hours in one day.*" (emphasis added) This would allow for blasting at more than one time period in one day, so long as the aggregate of total blasting time does not exceed the maximum of four hours. Thus, there should be no necessity for operations to "rush" to blast at one particular hour, as personnel engaged in blasting can detonate the round during any one of the scheduled periods in the daily aggregate of four hours.

Furthermore, as is explained in Section 861.65(a), blasting may be delayed and conducted at a previously unscheduled time under carefully prescribed conditions, if specified unavoidable hazardous conditions arise, in order to avoid safety hazards to workers.

(2) Many commenters stated that the four-hour limitation would unduly inhibit operations and was not authorized by the Act; several commenters objected that they could not sufficiently predict when blasting would be conducted. Some commenters also stated that the limitation would increase costs, but provided no supporting data. As previously discussed, however, the regulation allows for multiple blasting periods, aggregating to a daily total of four hours, giving a great deal of flexibility to an operator to fashion its own blasting schedule. Because the regulations only specify that detonation must be within the time frame, the operator can do all preparation for blasting during other times. In fact, several commenters stated that if it was clear that several different times aggregating to four hours was permitted, then the four-hour limitation would be acceptable.

Regardless of possible inhibition of operation and costs associated with these limitations, the Office must establish some time limitations on blasting under the Act. Section 515(b)(15)(A) of the Act requires that the person conducting surface mining activities ". . . provide *adequate advance written notice* to local governments and residents . . . of the planned blasting schedule."

Thus, some limitation on the frequency of blasting must be imposed, to ensure that predictions are made by the operator for the purpose of including in the schedule "adequate advance written notice." Secondly, Section 515(b)(15)(c) of the Act requires that blasting be limited with respect to the *"timing and frequency of blasts . . ."* Therefore, limitation on the total duration in which blasting may occur in any one daylight period is appropriate to implement this Section of the Act.

Given that the Act requires establishing limitations on the timing of blasting, the industry must develop the capability of planning its operation so as to be able to predict in advance, to a certain extent, the times in which blasting will occur. As noted above, some commenters indicated that this can be done under the "four-hour aggregate" system, which is what the Office requires.

(3) Comments that suggested limited blasting only to eight hours per day or "sunrise to sunset" would not meet the requirements of the Act. These limitations would not provide a schedule with sufficiently specific advance warning to inhabitants of areas around the minesite, persons traveling through these areas, and local governments so as to allow those persons and governments to regulate their daily activities around normal work or business hours when blasting would take place.

V. *Section 816.64(c).*

Additions were made to this Section from the proposed regulations, due to comments received and discussed under the preamble to Sections 816.64(a)(2) and 816.64(b)(2)(ii).

§ 816.65 Use of explosives: Surface blasting requirements.

Section 816.65(a).

(A) A few commenters objected to allowing the regulatory authority to specify time periods for allowable blasting that are more restrictive than sunrise to sunset, while others recommended further restrictions on blasting between 5 p.m. to sunset. Some commenters objected to prohibiting blasting at night, alleging that it may be dangerous to hold undetonated charges overnight. Other comments proposed that the regulatory authority be allowed to grant exemptions for night blasting on a site-specific basis in remote areas; additional comments cited the special conditions in Alaska as an example where restrictions on night blasting are unreasonable. One commenter assumed a conflict between this section and MSHA's proposed blasting regulations. A review of these comments resulted in the Office's consideration of five major alternatives; alternatives 4 and 5 were adopted.

1. Retain the Section as proposed;

2. Allow blasting at night in "remote areas;"

3. Modify the Section to add further restrictions on blasting between 5:00 p.m. and sunset;

4. Modify Section 816.65(a) to be more specific as to the reasons the regulatory authority may use to specify more restrictive time periods on an *ad hoc* basis;

5. Modify Section 816.65(a), by adding a provision to allow for blasting at night on loaded charges that cannot be either detonated by sunset or delayed until sunrise of the following day for safety reasons. (This alternative included attaching conditions to the use of night blasting, to ensure that the public is still adequately warned and protected as required by the Act.)

(B) *Alternatives 3 and 4.* A few commenters objected to allowing the regulatory authority to prohibit or otherwise regulate blasting in time periods in addition to the sunset-to-sunrise restriction. These comments objected to the vagueness of the discretionary power which would have been granted the regulatory authority under the proposed rule. The Office agreed that more specificity is desirable. Accordingly, the regulations have been modified to clarify the conditions under which the regulatory authority has the power to further modify hours for blasting.

The regulatory authority will only be empowered under Paragraph (a) to impose more restrictive blasting time periods for the specific purpose of protecting the public from adverse noise. In some cases, protection against noise may warrant special precautions, particularly because it can be much more severe under certain atmospheric conditions (Ref. 25, p. 404 and Ref. 21, p. 15). The public is adequately protected from other effects of blasting, such as ground vibrations and flyrock, by Sections 816.65(g) and (1). A few commenters recommended that blasting should be further restricted, than in the proposed regulations, between 5:00 p.m. and sunset, because of noise caused by blasting that would occur during those hours when people relax at the end of the day. The Office did not accept this recommendation as it would be redundant. The regulatory authority may specify more restrictive time periods to protect from adverse noise under Section 816.65(a)(1).

(C) *Alternative 5.* Several commenters noted that it may be dangerous to hold explosive charges overnight which were loaded with the intention of detonation during the day, but through equipment failure or sudden adverse weather occurrences could not be detonated until after sunset. These comments asserted that, in the next day, the explosives could

react to detonation by blowing out and throwing rocks over the area, due to moisture accumulation in the charge holes, or could result in incomplete or no detonation at all. The threat of such contingencies was said to be safety problems to the workers, such as in digging out undetonated explosives. Some of these comments recommended modifying the regulations to allow for blasting at night to prevent these safety problems.

Although not fully explained by the comments, throwing of rocks could possibly result from leaving undetonated charges held overnight. Due to the deteriorating effect of moisture in the blast hole on some types of explosives or blasting agents, some of the charged blast holes in a blast may not have the power necessary to fragment surrounding rock as originally planned. Under these circumstances, it is probable that some charged holes would lose their potential power to a greater degree than others, due to having been in the ground for a greater number of hours or being subjected to more moisture. Where charges that retain a considerable portion of their original power were adjacent to more severely weakened charges, a situation could be created that would result in excess rock being thrown in the air. This could be caused by the failure of some weakened charges to move the rock burden in a lateral direction as planned, with the more powerful charges only moving rock in a vertical direction.

As a result, the Office decided that a change in the regulation should be made to allow blasting at night, when it is necessary to prevent creating a hazardous condition, while maintaining controls to prevent abuse of the provision. These controls are imposed to ensure that the public is adequately warned of an emergency blast and that records are made and reported to the regulatory authority to ensure that the provision is not used except in unavoidable hazardous situations.

The Office notes that, while MSHA currently does not prohibit all surface blasting at night, a proposed revision to MSHA's regulations (33 CFR 477. 1308(j)) would create such a blanket prohibition. The Office will, however, ensure that its regulations are closely coordinated with MSHA's final rule and expects that, given the safety problems discussed above, MSHA will appropriately modify its proposed regulation when adopted in final form.

(D) *Alternative 2.* One commenter proposed that the regulatory authority be allowed to create exemptions for blasting at night, on a site-specific basis, for surface mines in "remote areas." This comment was rejected. The Act requires that blasting be appropriately restricted as to times without regard to the density of population in surrounding areas. Indeed, the Act requires protection of even a few persons (i.e., "the public") in areas located near to the permit area. Furthermore, the use of the "remote area" concept would be very difficult to enforce, because it would require extensive field investigations to determine the density of population in areas surrounding minesites, often in very difficult terrain, thereby utilizing enormous regulatory authority resources for the benefit of very few mine operations.

(E) A commenter from Alaska objected to the restriction on nighttime blasting due to portions of that State having up to 5½ months of completely daylight time and winters where daylight is only 2–3 hours a day in areas where coal is actively produced. This was decided to be outside the scope of this national rule-making and should be addressed, if valid, through appropriate special provisions for Alaska under Section 508 of the Act and 30 CFR 731.13, 736.22(a)(1), and/or 741, depending upon whether the State of Alaska seeks to implement its own State program.

(III) *Section 816.65(b).*

(A) MSHA commented that this section, as proposed, was unclear in two ways. First, unscheduled blasting was to be allowed only in "emergency conditions approved by the regulatory authority." The Section did not specify when or how these situations would be approved by the regulatory authority and left the implication that operators would have to contact the regulatory authority, after an emergency arose, to obtain permission to blast at unscheduled times.

The Office agreed with this comment and has reworded the Section to read, "previously approved by the regulatory authority in the mining plan." Though 30 CFR 780.13(f) requires that applicants for permits list such situations in the permit application, persons who are responsible for meeting the requirements of Section 816.65(b) could have misinterpreted the method and time of regulatory approval as the section was previously worded.

MSHA's is second concern was that the word *emergency*, along with the listing of "rain, lightning, other atmospheric conditions," was not consistent with MSHA terminology. MSHA considers rain and lightning to be expected and recurring hazardous events, not emergencies. MSHA labels such events as "hazardous situations," along with emergencies (totally unexpected events which are also hazardous, e.g., fires). The Office agreed to substitute MSHA's term, *hazardous*, for emergency, which makes terminology of the two agencies consistent and describes all situations which threaten operator or public safety. The Office has further limited approval of unscheduled blasting to those times of *unavoidable hazardous* situations, preventing approval of situations which could be created by the operator to justify deviation from the blasting schedule for convenience and not safety's sake.

Adoption of these changes in Section 816.65(b) also required changing the word *emergency* to *unavoidable hazardous* in Sections 816.64(b)(2)(v), 816.65(a)(2)(i), and 817.65(b)(2)(i), and adding it at Section 780.13(f), to maintain consistency of terminology throughout affected portions of the regulations.

(B) (1) Several other comments received on proposed Section 816.65(b) suggested that additional requirements be added, that the blasting schedule be eliminated, and asserted possible conflicts with MSHA regulations. Analysis of these comments led to consideration of three alternatives; alternative 1 was adopted.

1. Revise Section 816.65(b), only as per MSHA's comments.

2. Require a report to be submitted to the regulatory authority, within 10 days of any emergency blast.

3. Explain the definition of emergency condition in this section.

(2) *Alternative 2.* One commenter recommended that the emergency conditions and reasons for deviating from the blasting schedule be documented and reported to the regulatory authority within 10 days of the occurrence of the blast. The Office believes that the recording requirements of Section 816.68 are adequate to ensure that sufficient information about the blast is developed and maintained for scrutiny by the public and regulatory authority. Under Section 816.68, the permittee must record pertinent information about each blast contemporaneously with blasting and maintain that record for public and regulatory authority inspection. This should be adequate, on a national basis, for regulation of the wide variety of circumstances in which emergencies may occur.

That range is distinguishable, however, from the narrow type of circumstances when blasting at night would be authorized in Section 816.65(a). In the latter situation, reports should be filed with the regulatory authority much less frequently, and the regulatory authority needs to more closely scrutinize night blasting because of its high potential for causing adverse noise effects. The decision on Section 816.65(b), of course, will not preclude individual States from requiring the filing of such reports, if their needs require it.

(3) *Alternative 3.* Another commenter suggests that the conditions

justifying deviation from the schedule be expanded to specifically include "events beyond the operator's control." The Office feels that this is adequately provided for by substituting the adjectives *unavoidable* and *hazardous* to describe those situations which warrant unscheduled blasting.

(4) *Other Comments.* One commenter's objection, that the schedule, stating it is impractical to establish, was rejected. The Act in Section 515(b)(15)(A) requires a blasting schedule.

Another commenter suggested that there are some differences between Section 815.65(b) and MSHA's regulations, 30 CFR 77.1303(uu) and proposed Section 77.1305(g). MSHA's existing and proposed regulations call for suspension of operations and withdrawal to a safe location of all persons upon the approach of an electrical storm. The Office does not believe that these create a conflict with Section 816.65(b), as the withdrawal would constitute justification for deviation from the proposed schedule, if the operator's permit had provided for such conditions under Section 780.13(f). If delay because of storm conditions had not been approved by the regulatory authority in the permit, the operator would have to wait for the next scheduled time period to conduct blasting operations. In no event does Section 816.65(b) allow for blasting during an electrical storm.

III. *Section 816.65(c).*

(A) A number of commenters objected to the requirement that warning and all-clear signals be given which are audible at a distance of one-half mile from the blast site. Other commenters felt that this provision is already covered by MSHA regulations, that particular items should be deleted, that additional sections should be added covering specific provisions on safety in the storage and use of explosives, that the signals should be audible "under normal weather conditions", that some wording was unnecessary, and that the section was inappropriate for the State of Alaska.

The Office's review of these comments led to the consideration of four major alternatives and the adoption of alternative 1.

(1) Do not revise this Section from the proposed rule;

(2) Reduce the audible limit to one-quarter mile or less;

(3) Delete the requirement for periodic notification and posting of signs;

(4) Specify the signal source and signal character.

(B) *Alternative 2.* Several commenters recommended that the audible distance requirement for signals be reduced to one-quarter mile or less. Some of these commenters asserted that, to meet the requirement that the signal be audible for a distance of one-half mile, the noise level of the signal would be greater than allowed by MSHA. Although the particular regulation was not specified by the commenters, 30 CFR 70.510(b)(3) of MSHA's regulations lists a table of permissible noise exposure levels as follows:

Duration per days (hours)	Noise level (dBA)
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
¾	107
½	110
¼ or less	115

(Figure 1)

These do not substantiate the commenters' assertion that the requirement for warning signals audible to one-half mile from the blast would require a sound source that would exceed MSHA's allowable noise levels at the mine. First, several warning signal devices can be appropriately positioned at strategic locations within the one-half mile area and the sounding of the several devices coordinated electronically or by some other means. The noise levels from the individual devices would be considerably less than for a single device used to notify the entire one-half mile area. The Office's regulations do not specify that a single signal device has to be audible for one-half mile. Rather it requires that signals that are audible within a range of one-half mile shall be given.

Second, as provided in MSHA's Section 70.510(b)(3), a sound level of 115 dBA is an allowable level for up to *15 minutes per day.* Adequate warning signals under the Office's regulations can be conducted to aggregate *less than 15 minutes per day,* particularly considering that blasting may only be conducted within a total aggregate of four one-hour periods. Thus, warning and all-clear signals may be divided into eight segments of one minute each, far less than the 15-minute limit imposed by MSHA's regulations.

Third, calculations made by the Office and contained in its administrative record indicate that a warning signal sounded at 115 dBA (MSHA's maximum in Table 1) or less can be audible at a distance of one-half mile.

(C) *Coverage by MSHA.* Several commenters stated that the provisions of this Section are already adequately addressed under MSHA's regulations. MSHA has only one *proposed* signal warning regulation (30 USC 77.1308h), and it merely provides that "ample warning shall be given . . ." However, Section 515(b)(15)(A) of the Act requires that daily notice be given to residents/occupiers in the area that are within one-half mile of the blast site. Therefore, the Office decided not to alter the regulation, because the provisions of this section will fulfill the Act's requirement for daily notification of the public, in a manner that is satisfactory, appears to be most practical, and does not duplicate MSHA's proposed general requirement.

(D) *Alternative 4.* A few commenters recommended that additional provisions be added to Section 816.65(b), to specify rules on handling explosives, and that this paragraph be modified to specify the actual signal type and the signal source. The material that was recommended to be inserted is covered in MSHA's rules, 30 CFR Part 77. Addition of those rules would be mere duplication of MSHA, as opposed to the requirements for when signals are to be given and at what distances they must be audible, and would not provide any greater protection to the public or environment. If conditions in particular States require specific signals or signaling devices, these can be adopted in that State's regulations.

(D) *Alternative 3.* Several commenters recommended deletion of the provisions for periodic notification or communication of the meaning of signals and maintenance signs. Commenters felt that miners and visitors are warned and instructed when entering the property. That, in itself, would not, however, provide warning instructions for residents within one-half mile, if they are not employees of the mine. Therefore, the comments were not accepted.

(E) *Other comments.* (1) One commenter recommended that the section should be changed to "audible, *under normal weather conditions, within a* range of one-half mile." The Office did not feel that this modification would improve the regulations, as the phrase "normal weather conditions" would be subject to highly variable, and the statute requires adequate warnings without regard to the type of weather conditions. Indeed, severe weather is the time when warnings are most necessary, because of the increased danger of airblast and reduced visibility for persons traveling near the permit area.

(2) A commenter stated that the phrase, "through appropriate instructions," should be deleted as unnecessary additional wording. This wording specifies how the information shall be communicated and the Office, therefore, decided it should be retained to ensure that the Act is fully implemented.

(3) Another commenter alleged that there are significant differences between most mining to be covered by

this Section and conditions of mining in the State of Alaska. This comment was believed to be outside the scope of this national rule-making and can be more appropriately resolved when a particular permanent regulatory program is approved for Alaska under Subchapter C and D.

(4) Several commenters alleged that the blasting schedule provision is redundant, because audible warnings required prior to a blast under Section 816.65(c) would be sufficient. Audible warnings alone, however, are not sufficient. The Act specifically requires publishing of blasting schedules in advance. Furthermore, audible warnings will not provide adequate advance notice either to persons inside buildings in the area around the minesite (and thus cut off from the signals), or to persons who travel through the blast area between the signal and the blast.

(5) Several comments cited Gustafsson (page 256, ref. 8) on the effects of atmospheric conditions on the propagation of blast noise, as justification for eliminating the four-hour time aggregate. Gustafsson correctly points out that—

". . . wind direction, wind velocity, air temperature, and air pressure have a very great effect on the propagation of pressure waves. Even the type of weather, for example cloudy or almost clear, should be taken into consideration when estimating the propagation of pressure waves. . . ."

However, the multiple time frames allowed by the "four-hour aggregate" rule of Section 816.65(b)(2)(ii) and the emergency blasting provisions of Section 816.65(a) and (b) provide a degree of flexibility such that the requirement for a blasting schedule need not be the cause of blasting at times when atmospheric conditions may cause propagation of blast noise. If the blast cannot be detonated during any of the scheduled blasting periods because of adverse atmospheric conditions, the blast can be detonated when necessary in accordance with Section 816.65(a) and (b).

(6) One commenter stated that the "four-hour limit is meaningless," asserting that operator will be able to blast for 10 minutes in any hour and thus blast every half-hour throughout the day. The regulations, however, do not allow this to occur. Section 816.64(b)(1) states that "a blasting schedule shall not be so general as to cover all working hours. . . ." Section 816.64(b)(2)(ii) states that "such *periods* shall not exceed an *aggregate* of four hours." (Emphasis added.) These sections of the regulations limit blasting operations to not more than four specific hours. Thus, blasting could occur during the hours of 9 a.m.–10 a.m., 11 a.m.–12 p.m., 1 p.m.–2 p.m., 3 p.m.–4 p.m., but not in 10-minute increments of each of the hours 9:00 a.m., 10:00 a.m., 11:00 a.m., 12:00 p.m., 1:00 p.m., 2:00 p.m., 3:00 p.m., 4:00 p.m., 5:00 p.m., 6:00 p.m., 7:00 p.m. To further ensure that this system is not abused and provides for protection against the hypothetical situation raised by commenters, a provision was added to Section 816.64(c) to allow the regulatory authority to require republishing and redistribution of the blasting schedule, if there is a substantial pattern of non-adherence to the original schedule as evidenced by the absence of blasting during scheduled periods.

IV. *Section 816.65(d).*

(A) A few commenters pointed out that some confusion could result from the wording of the proposed rules as to the limit of the "blasting area" to be protected from entry. Objections were also received on the time limit for guarding and on the protection of livestock. Based on these comments, the final rule was reworded to clarify the area to be regulated and to eliminate the requirements of prohibiting access to the area for a specific time prior to the blast.

(B) Several commenters stated that use of the term "blasting area" would result in confusion as to the actual extent of the area to be regulated under this section. The term "blasting area" was used in proposed Sections 816.65(d) and 817.65(e), to mean the area possibly subject to flyrock from blasting. However, one commenter stated that MSHA presently interprets "blasting area" to be confined to the blast hole pattern.

Another commenter expressed the fear that the Office's proposed rule would be interpreted to allow unauthorized persons to enter the blasthole pattern area at any time until 10 minutes prior to detonation of the blast. Such an interpretation is unwarranted and would be unacceptable to both MSHA and the Office. Further, by deleting the words "blasting area" and substituting "an area possibly subject to flyrock from blasting," the confusion of terms will be eliminated.

(C) One of the commenters also pointed out that, where it is necessary to stop traffic during blasting near public roads, the 10-minute minimum control limit will cause extra inconvenience to the traveling public. The Office feels that it is not necessary to specify a particular time limit prior to the blast for which access to the flyrock area should be controlled.

The purpose of the rule is to assure that the public or livestock will not enter an area where they could be endangered by flyrock during blasting and that access to the area after a blast will not be permitted, until an inspection by the mining personnel indicates it is safe to do so. To accomplish this may require that access to the area be regulated more or less than 10 minutes prior to the blast. Thus, if the section were not re-worded, there would be confusion about the area to be guarded and in some instances the public would be subject to unnecessary inconvenience due to the specified time limit of control prior to the blast.

(D) One commenter also objected to the inclusion of livestock in the regulation on the grounds that all States have livestock fencing laws and therefore the inclusion of livestock was redundant. Livestock constitutes "property" protected by the Act. Fencing may not be successful in all cases, or fences may be too far apart to preclude widespread movement of animals into close proximity of blasting. Therefore, the Office decided not to delete livestock from the section.

V. *Section 816.65(e).*

Although several commenters supported the proposed version of this section, other comments suggested that either it be deleted, or the wording changed to agree with relevant MSHA regulations. Several commenters recommended deletion on the grounds that the guarding of charged holes is already covered by MSHA and that an additional rule covering the same item is merely duplicative. MSHA does, in fact, cover the protection of charged holes under 30 CFR 77.1303(g), which provides: "Areas in which charged holes are awaiting firing shall be guarded or barricaded and posted or flagged against unauthorized entry." The Office believes that the MSHA rule is adequate, so that the Office's proposed rule was redundant. MSHA's regulation will apply to surface coal mining operations throughout the active phase of mining. Blasting is not ordinarily conducted at other times in the surface mining of coal, and the flagging/guarding of holes is related solely to worker protection, not those outside the mine-site.

Section *816.65(f)—Airblast Standards*

(A) Numerous comments were received on a variety of aspects of the airblast standard, including recommendations for both higher and lower permissible noise levels, changes in frequency specifications in Hertz (Hz.), and exemption of certain structures from protection by the standards. A review of the comments resulted in the consideration of the following alternatives. Alternatives 10, 11 and 12 have been adopted.

(1) Retain the rules as proposed;

(2) Increase the permissible airblast level;

(3) Decrease the permissible airblast noise level standards;

(4) Permit a percentage of the blasts to exceed the noise level standards;

(5) Delete the airblast noise level standards entirely;

(6) Change the Hz (± 3dB) in the table in Section 816.65(e)(1) to Hz (−3dB);

(7) Delete the C-weighted noise level standards;

(8) Replace the numerical airblast noise level standards with a stemming requirement;

(9) Use only one frequency specification, instead of multiple specifications;

(10) Delete the reference to the permit area in Section 816.65(e)(1) and allow a waiver from persons leasing structures from the operators;

(11) Add a provision enabling the regulatory authority to require monitoring of blasts;

(12) In Section 816.65(e)(2) change the upper limit of frequency from 500Hz to 200Hz and specify "Type 1" sound level meters for C-slow measurements.

II. *Analysis of Comments and Alternatives*

A. *Introduction.*—MSHA health standards in 30 CFR, Parts 70 and 71, protect only mine workers from hearing loss caused by *continuous* noise, such as that emitted by trucks, shovels, car shutters, and crushers. However, impulsive noise, such as airblast resulting from the detonation of explosives is not similarly regulated by MSHA. Because impulsive airblast can cause property damage (Ref. 21, pp 2,3,15; Ref. 25, p.400), the Office has adopted standards to prevent damage to structures and to protect the public from noise resulting from airblast.

Alternatives 2, 3, and 5. Reference 21 was written in 1974 and was based on 26 quarry blasts and an analysis of the results of a great deal of previous work by other researchers. This reference recommended a 136 dB linear peak value (equivalent to the 130 peak measured at six Hz or lower peak response) as a minimum allowable level for airblast, based on damage probabilities. This data was further supported by more recent work.

The airblast noise level standards of the regulations are based largely on a special study conducted by the Bureau of Mines (Ref. 22). The time histories of hundreds of cases of ground vibration, airblast, and structural response to ground vibration and airblast were plotted and analyzed. Using the observed structural response to ground vibration and airblast and observed damage to the structures, an appropriate airblast/ground vibration equivalence, consistent with the latest data on structure response, damage, and tolerable levels was derived.

The noise level limitations specified in the table in Section 816.65(e)(1) represent the conclusion of the Bureau of Mines study, the latest state-of-the-art in understanding coal mine blasting airblast on structures and methods of measurement of that airblast. To increase reliability, two independent approaches were used to derive the values specified in the regulation.

(1) The first analysis involved determination of the structural response associated with a one-inch-per-second ground vibration. Plots were made of the previously described data organized into four classes: one-story homes, two-story homes, corner responses (structural), and mid-wall responses (non-structural).

The airblast response data were then similarly analyzed, except that the above four categories were each examined for six types of airblast descriptors. The results of this series of comparisons correlated very closely, probably because the natural frequencies of structures[1] are within a narrow range (Ref. 12, pp. 6&7).

Based on the first method of analysis, it was decided that the amplitude of mid-wall and corner motions of structures could be limited to levels below those causing damage, by limiting the amplitude of airblast from 135 to 137dB,[2] when measured on a blast meter (Ref. 20, pp 20–23 and 21, p. 14) that measures the peak amplitude and has a flat frequency response of 0.1 to 200 Hz (135 dBL (0.1Hz), or when the amplitude of airblast is limited to 109–112 dB when measured with a "type 1" sound-level meter that will hold the peak reading and uses the C-weighting, slow response described in ANSI Standards S1.4-1971 (dBC-slow).

Limiting airblast to 137 dBL (0.1Hz) would protect structures from structural damage, when the most disadvantageous combination of structure response to ground vibrations and structure response to airblast is considered (Ref. 22). Consequently, the use of 135 dBL (0.1 Hz) provides a slight safety factor to preclude damage to structures. This factor was also needed to try to reduce human annoyance factors from mid-wall structure motions and associated rattling (Ref. 21, pp. 15 and 16). C-weighted-slow responses were similarly analyzed, with the value of 109 dB C-slow recommended as being equivalent to the 135 dBL (0.1 Hz) level.

[1] As used in Ref. 22, the natural frequency of the structure is that frequency at which the structure tends to vibrate when excited by an impulsive loading such as airblast or ground vibration from blasting.

[2] As used in Ref. 22, the dB (decibel) is a measurement of sound pressure and is defined as 20 times the logarithm to the base 10 of the ratio of the measured pressure to a reference pressure of 20 micro newtons per square meter.

(2) A second independent technique was used to analyze the airblast response data, involving displacement produced strain which is related to cracking in interior walls (Ref. 22, p. 4), according to the following method:

Method No. 2: (Displacement-produced strain method)

lowest observed damage level

↓

0.016 in maximum wall displacement

↓

using lowest natural frequencies

↓

compute theoretical associated airblast

Method No. 2 was used because displacement, or the distance a particle moves, is not, by itself, a good damage predictor, since displacement is frequency dependent. Thus, both displacement and frequency should be specified. (Peak-particle velocity does not have this disadvantage, because it is not frequency dependent). However, structure walls and corners have definite frequency ranges (Ref. 22, p. 4).

An analysis was performed to determine the airblast levels associated with the lowest damage case in the available data of 0.016 inches maximum wall displacement. For both midwalls and gross-structure motions (corners), the most strict values were derived by taking the lowest natural frequencies typically encountered, 12 Hz for mid-walls and six Hz for corners. In all cases, the associated airblast level for both one- and two-story homes equaled or exceeded the 135 dBL (0.1Hz) peak linear and 109 dB C-slow, with most values within a few dB of these limits, further indicating that the 135 dBL (0.1 Hz) and 109 dB(C-slow) limits are necessary to protect from structural damage.

(3) The use of C-slow measurements has been recommended in the Committee on Hearing Bioacoustic (CHABA) Working Group 69 report to the EPA. (Ref. 5, pp. V-1-V-5). The Office is not convinced that this method is superior to peak-linear; however, C-slow is included as an alternative, based on CHABA's recommendation, to provide for the use of another class of monitoring instruments which will give equivalent indications of potentially damaging airblast to the other types of instruments allowed under the regulations.

(4) Some commenters suggested lower noise decibel standards, based on arguments that human annoyance is caused at levels of noise below the proposed standards. Some commenters dispute this, arguing that prevention of human annoyance goes beyond the requirements of the Act. The latter commenters felt that the 135 decibel (0.1 Hz or lower) specification was unreasonable, because it provides an additional safety factor (Ref. 22, pp. 3-5) to prevent human annoyance, as com-

pared with the one-inch-per-second peak-particle velocity limitation, and should be raised to 137 decibels.

A State agency submitted comprehensive testimony on the annoying effects to humans of airblast at coal mine blasting. Two commenters documented the relationship between sonic boom and surface mine airblasts. Based on a large volume of data, the commenters recommended changing the table values of 135dB, 132dB, 130dB and 109dB, to 128dB, 125dB, 123dB and 98dB, respectively. These data lend support to 135dB, rather than 137dB as a reasonable level. Midwall motions and associated rattling caused by airblast (Ref. 22, pp. 1-5) cause not only human annoyance, but can also cause minor damage such as falling bric-a-brac and dislodgement of items from shelves. Furthermore, the Act requires preventing harm to public health and safety, which includes prevention of severe annoyance to people (see Section 515(b)(15)).

The two adverse effects from airblast that were emphasized in the argument for lower airblast levels were loss of sleep and a startle effect. The regulations already are believed to alleviate loss-of-sleep problems, by prohibiting night-time blasting, except in the case of a documented safety hazard under Section 816.65(a). Such a safety hazard, where documented to the satisfaction of the regulatory authority, should reasonably take priority over loss of sleep. It will be the responsibility of the regulatory authority to assure that the night blasting waiver provision is not abused. Therefore, the Office decided not to adopt more stringent noise standards in response to the loss-of-sleep comments.

The "startle effect" cited by a commenter is based on studies of sonic booms, which are similar to airblast from blasting. However, sonic booms are normally unpredicted events. Because of the blasting schedule provision of Section 816.64 and prohibiting of blasting outside normal daylight hours, Section 816.65(a), the public will have reasonable notice of when to expect blasting, thereby alleviating the startle effect. Also, the Office notes that a warning signal is required to alert the public before blasting, Section 816.65(c).

Furthermore, it is important to note that, because the decibel scale is logarithmic, a 7 decibel (db) reduction from the proposed standard amounts to a reduction of about 55 percent in the sound pressure. (For instance, 132dB=1.69 psi, 125dB=.75 psi.) Based on typical airblast levels (Ref. 21, p. 12 and Ref. 19, pp. 12 and 13), this would be a very difficult reduction to achieve as an absolute limitation. Since Sections 816.64 and 816.65(a) already substantially alleviate the two objections of "loss of sleep" and "startle effect," the proposed airblast standards have not been lowered.

(5) Some commenters stated that meeting the one-inch-per-second peak-velocity limitation will automatically control airblast damage. This is not true. In addition to the charge weight per delay and distance from the blast, which do control both airblast noise and ground vibrations, damage from airblast is independently a function of the type of burden being blasted, type and amount of stemming being used (Ref. 25, p. 403), improper or lack of covering of surface detonating cord, and lack of attention to rock structural weaknesses and weather conditions (Ref. 21, p. 15, Ref. 8, p. 220, and Ref. 13, p. 15). Thus, control of ground vibrations alone will not prevent airblast damage, and the specifications of Section 816.65(e) are necessary for limiting airblast.

(6) A few commenters stated that the airblast standards are based merely on preventing crack extensions in walls of structures and, therefore, distort the purposes of the Act. However, Section 515(b)(15) of the Act requires prevention of damage to structures. Propagation of an existing crack is a reasonable definition of damage, and the prevention of such events is not an unreasonable restriction. Of course, airblast can also cause initiation of new cracks, also considered "damage" by the Office. As discussed above, the airblast standard will also help to reduce human annoyance, independent of structural damage.

(7) Without giving reasons, several commenters asserted that the study of Reference 22 cannot be defended. Some commenters (again without a rationale) felt that the airblast standard is inappropriately tied to the one-inch-per-second peak-particle velocity limitation. The study in Reference 22 was based on hundreds of structure response, ground vibration, and airblast time histories. These data were obtained from field studies involving surface mine production blasts and onsite field measurements. The Bureau of Mines has been the nation's leading research organization in the field of blast vibrations for over 20 years. The researcher who conducted the study on which the airblast standard is based is a recognized authority in the field of airblast and ground vibrations. The large volume of data contributing to the study, the reputation of the organization conducting the study, and the qualifications of the investigator lend strong credibility to the study.

None of the commenters stating that the study cannot be defended have given any compelling rebuttal to the study. None of the commenters gave substantial data which would establish that noise levels significantly greater than those to be allowed under the regulations could preclude damage to structures. Rather, they mainly argued that the specified limits cannot be met 100 percent of the time. As explained below, airblast can and should be adequately controlled to meet the regulation without a variability provision.

Further, damage to structures is created through structural vibrations from both ground vibrations and airblast. Through analysis of hundreds of vibration records from production blasts, the Bureau of Mines established a reliable equivalence between the response of a structure to a one-inch-per-second peak-particle velocity and the airblast levels specified in the tables. (Ref. 22, pp. 1-5). The validity of the one-inch-per-second peak-particle velocity ground vibration damage-prevention criterion is established in the preamble discussion of Section 816.65(f).

Therefore, the validity of the airblast table values for preventing damage has been adequately established by correlation between ground vibration-produced damage and airblast noise levels. The inappropriateness of tying the airblast criterion to the one-inch-per-second peak-velocity limitation was only alleged by the commenters, but no justification was offered. Therefore, the Office believes it entirely correct to establish the noise level standards in the manner selected.

(C) *Alternative 4.* Several commenters stated that the table standards cannot be met consistently because of variations in rock subjected to blasting and weather conditions. Some commenters recommended that the operator be permitted to exceed the standard 20 percent of the time.

Historically, airblast from coal mining has not been pervasively regulated in this country. Therefore, it has not been necessary for all mine operators to systematically design blasts to limit airblast, except where specific complaints arose. Commenters' requests that the limitation be met only 80 percent of the time appear to be based on the range of airblast occurring under current practice, rather than what the industry is, in fact, capable of achieving. Reference 25, pages 403 to 405, describes blast design techniques such as stemming and proper burden which will reduce airblast to a level meeting the standards. (See also Ref. 21, pp. 3 and 15). The necessity to consider weather conditions in reducing the propagation of airblast is discussed in Reference 25, p. 404; Ref. 3, p. 15, and Ref. 21, p. 15. The Office, therefore, believes that the operator will be able to meet the standard. If adverse weather problems develop, such as a strong wind blowing

in the direction of nearby structures from the blast operation or a strong temperature inversion (Ref. 25, p. 404 and Ref. 21, p. 15), it may be necessary to reschedule blasting until adverse conditions subside.[3]

Further, a standard requiring compliance only 80 percent of the time could subject the public to potentially damaging airblast for 20 percent of all shots. Such a standard would not fulfill the provision of Section 515(b)(15)(C) of the Act, which requires prevention of damage to property outside the permit area by limiting the duration and frequency of blasting. Furthermore, allowance for the standards to be violated 20 percent of the time is particularly inappropraite where, as here, the Office finds that the factors leading to exceedances are within the indsutry's ability to avoid violation of the standard. Finally, because blasting is a non-continuous, essentially non-regularized activity, a compliance standard allowing for 20 percent of violations of a standard would be virtually impossible to enforce consistently through field surveillance. Such a standard would require very heavy commitment of regulatory authority resources to monitor for unpredicatble periods of time in amassing and analyzing data until sufficient data were obtained to calculate a 20 percent deviation figure.

(D) *Alternative 6.* One commenter suggested a specification of (−3dB) only, rather than (±3dB) in Section 816.65(f)(1). A second commenter felt that (±3dB) allows too much tolerance. No rationale or justification was given for the change from (±3dB) to (−3dB), and the Office did not adopt the first comment. The (±3dB) defines the frequency response limit of the measuring instruments and not the accuracy of the measuring system (Ref. 21, pp. 4 and 5). It is not a tolerance allowed to the operator in meeting the standard, but rather an instrument calibration specification.[4] The (±3dB) was determined to be a proper specification. The rule has not been changed in that regard.

(E) *Alternative 7.* Commenters stated that the C-weighted standard is not valid, because it is alleged not to respond to a great deal of low frequency energy associated with blasting. However, Reference 22, pp. 1-5, established the equivalence of the C-weighted standard to the other airblast damage standards, in terms of its effect on structures and use in precluding damage, thereby indicating its utility even in low frequency situations. The Committee on Hearing and Bioacoustics has supported the C-weighted measurements to the EPA (Ref. 5, pp. V-1-V-5). A state agency, in its comments on this section, also presented a proposed C-weighted specification but made no comment as to its validity. Therefore, the Office decided to retain the C-weighted standard.

(F) *Alternative 8.* One commenter felt that a stemming requirement should be specified, rather than an airblast limitation, and another commenter supported the Office's proposal not to include a stemming limitation. Stemming is insert material placed in the top of the blast hole above the explosive charge. Proper stemming alone will not control airblast. Proper blast design (Ref. 1, pp. 373-396) and attention to weather conditions (Ref. 21, p. 15, Ref. 25 p. 404) are also important in controlling airblast. Thus, the suggestion to replace the airblast noise levels limitation with a stemming requirement was rejected.

(G) *Alternative 9.* Some commenters felt that four different frequency specifications would be difficult to enforce and recommended that only one be selected. All of these commenters recommended their own airblast criteria, each based on four frequency response spectra, which is also the basis for the Office's standard. The Office's multiple frequency standard was selected, because a wide variety of airblast monitoring equipment is available with a wide variety of frequency response. Since a reliable comparability of the frequency responses was established in Ref. 22, pp. 1-5, the multiple standard was adopted to avoid unduly limiting the use of various types of monitoring equipment, all of which are capable of reliably detecting damaging levels of airblast. Because the four different frequency specifications amount to essentially the same level of noise control, the Office has decided to retain the four specification standards to allow for the use of a wider variety of testing equipment.

(H) *Alternative 10.* Some commenters suggested deleting the limitation on the exemption of property owned by the permittee and exempt from the airblast standard only that property in a permit area. Another commenter suggested deleting this limitation on the assumption that the permittee's property not be leased to any other person. The first suggestion was accepted, because the Office believed it unreasonable to require a person to protect his own property from airblast whether or not it is within the permit area. In response to the second comment, the regulation was modified to allow a person leasing a structure from the permittee to sign a waiver relieving the operator from meeting the airblast limitation, with respect to that structure.

(I) *Alternative 11.* The proposed rules on airblast made no provision for requiring airblast monitoring, where violation of the standard is suspected. The ground vibration Section 816.67(c), has such a provision. To enable the regulatory authority to properly enforce the airblast provisions, wording has been added at Section 816.65(e)(4).

(J) *Alternative 12.* One commenter correctly stated that, since the major part of sound energy is in frequencies below 200 Hz, specifying a blast meter with at least 500 Hz is unnecessary and would eliminate the use of satisfactory instruments that are presently available. The Office agreed with this analysis and has changed the regulations to reduce the frequency response specification to 200 Hz.

(K) *Other Comments.* One commenter felt that the specification in the regulation for the frequency limit of the noise measuring system should be flat or calibrated.[5] However, the commenter did not provide evidence of a comprehensive data base suggesting that such equivalencies can be routinely made on a national basis. The regulation has not been changed, as requiring a flat response assures that adequate monitoring instruments will be used. Further, use of calibrated systems on a routine basis would cause doubt as to the accuracy of data collection.

Another commenter felt that adverse weather conditions should be used by the regulatory authority to determine extenuating circumstances in any decision on penalties assessed for violation. This suggestion was not accepted. As discussed more fully above, it is the operator's responsibility to take weather conditions into account when firing a blast. The operator should not create a situation damaging to a private structure, regardless of weather conditions, because the operator can delay blasting until after weather returns to normal.

Some commenters correctly stated that three types of sound level meters are described in ANSI-SI. 4-1971. As pointed out in Ref. 12, p. 22, a large amount of the energy in airblast and ground vibration is contained in frequencies below 20Hz. This is reflected

[3] A temperature inversion is a condition in which the temperature decreases, then increases with altitude, rather than decreasing with altitude, causing sound waves to be refracted back to the earth. (Ref. 25, pp. 404-405) (Knowledge of the existence of a temperature inversion can be obtained from local weather bureaus).

[4] The limit of the frequency of a given instrument is that frequency at which the instrument fails to respond to three decibels or more of the actual noise present.

[5] A specification that an instrument's response is flat means that the response to the frequencies within its range is constant to within less than one dB. Calibration attempts to establish an equivalence between an instrument without a flat response and one with a flat response.

in the different sound levels specified when using different blast meters. Because Types two and three sound level meters described in SI. 4-1971 have frequency cutoffs at 20Hz and Type one meters have a frequency response down to 10Hz, it is evident that Type two and Type three meters would not give as good an indication of the potential damage as a Type one meter. The final regulations reflect this by requiring that only Type one meters be used for the C-weighted, slow response values.

VII. *Sections 816.65(f).*

A. Substantial comment was received on proposed Section 816.65(g). Most of the comments requested that the 1,000-foot limitation in subsection (1) be reduced to some lower limit, on the theory that this limitation was arbitrary and had no statutory basis. Several commenters also suggested that the 500-foot limitations in subsection (2)–(3) be deleted. Several commenters felt the 1,000-foot limit was acceptable, assuming that specific waiver provisions are available. Other commenters argued that the paragraph should be entirely deleted, because other provisions of Section 816.65 assertedly adequately protect the public, making distance limitations unnecessary. A few comments stated that the phrase "other appropriate investigation" should be deleted, and a few requested that a provision be added that the distances not be decreased if there was a probability that airblast or ground vibration would be increased. A few comments stated that, either the entire section, or the reference to dwellings should be deleted. Several commenters stated that the 1,000-foot limitation would impose unwarranted costs on the industry. Review of the comments indicated that the following alternative should be considered and that alternative 3 should be adopted.

(1) Retain Section 816.65(f), as in proposed Section 816.65(g);

(2) Change the distance limitations from 1,000'/500'/500'/ to 300'/300'/500'/, or to ¾ mile /500'/500'

(3) Add the term "seismic investigations" to Section 816.65(f), retain Sections 816.65(f)(1) and 816.65(f)(2) as unchanged and delete 816.65(f)(3).

B. *Analysis of Comments and Alternatives.*

(1) *Legal Authority.* Several commenters stated that the 1,000-foot distance limitation requiring regulatory authority approval for its waiver was arbitrary and lacked statutory authority. This argument has been rejected in the U.S. District Court for the District of Columbia *In Re Surface Mining Regulation Litigation* 452 F. Supp. 327, 345-346, (1978). The Court held that the Office does have authority to establish a 1,000-foot distance limit on blasting in its regulations under Section 515(b)(15) of the Act, where those regulations do not absolutely prevent mining. Rather, blasting operations may be regulated, if allowed within the specified limits, upon approval of the regulatory authority.

(2) *Alternative 2.* A commenter stated that no blasting should be allowed within ¾ mile of a residence under any conditions, but provided no evidence to justify this position. Therefore, the Office declined to accept it.

Several commenters recommended distance limitations for Section 816.65(f)(1) of less than 1,000 feet. Some comments suggested 500 feet, two recommended 300 feet, one recommended 800 feet, and five simply stated that 1,000 feet was too great a distance. Most of these commenters based their recommendations on the incorrect belief that the Office did not have statutory authority to set such a limit.

Several others stated that blasting is done safely at distances closer than 1,000 feet, and, therefore, should be allowed. The fact that blasting can be done safely at distances less than 1,000 feet from a structure does not justify eliminating the 1,000-foot limitation. Because blasting can adversely impact public property and safety at distances up to 1,000 feet, if not properly controlled, there is a substantial need for close scrutiny by the regulatory authority of blasting operations within this distance.

Flyrock and noise are particular problems caused by blasting within 1,000 feet of dwellings. In Perry County, Kentucky, flyrock from surface mine blasting several hundred feet away severely injured a four-year-old standing in the doorway of his home and damaged three homes and four automobiles. (*Surface Mining Control and Reclamation Act of 1977: Hearings on H.R.2. before the Subcommittee on Energy and Environment of the House Committee on Interior and Insular Affairs, 95th. Congress, First* Session, Part II, p. 313 (1977) ("House Hearings"). In Dante, Virginia, a 200-pound rock was thrown over 2,000 feet from the blasting site (House Hearings, Part II, p. 313). The State of Alabama, recognizing the problem of flyrock and noise, specifies a distance limitation on blasting of 800 feet, within which special precautions must be taken by covering all detonating cord to minimize airblast and posting of guards to protect against flyrock. (House Hearings, *SUPRA* Part I, p. 138). Cases have been revealed where blocks of rock up to one-half cubic meter have been thrown hundreds of meters. (Gustafsson, Ref. 8, p. 86).

Blasting is also a problem with respect to excesive ground vibrations within 1,000 feet of dwellings. To comply with the scaled distance formula of 60 at 1,000 feet, the maximum charge weight per delay is 278 pounds, as shown in the table in Section 816.65(i)(2). For ammonium nitrate fuel oil at a specific gravity of 0.8 gm/cc, this amounts to a seven-foot charge length placed in a 12-inch diameter blasthole and a 12.5-foot charge length in a nine-inch diameter blasthole.[6] Since single charges of these lengths would be unacceptable (Ref. 1 pp. 388-390) for blasting in a typical surface mine with bench heights of 50 to 100 feet, the operator would have to take alternative action such as monitoring all shots, using a modified scale-distance formula as allowed in Section 816.65(b), using multiple-delay deck charges within the blasthole, or drilling smaller diameter blastholes. To assure compliance with the one-inch-per-second peak-particle velocity limitation in such a close-in situation, it is important that the operator make his contingency plans known to the regulatory authority and have them approved so that compliance can be properly monitored.

In those situations where the operator is not using scaled distances but is monitoring each blast, special precautions are also necessary, such as those described by a commenter. That comment stated that, historically, an operator's charge weights were 400–1,000 pounds. Assuming that 1,000 pounds is a common charge, this would represent charge lengths of 25.5 feet in a 12-inch diameter blasthole and 45.4 feet in a nine-inch blasthole.[7] These would be acceptable charge lengths under many conditions (Ref. 1, pp. 388–395). Additional precautions to meet the one-inch-per-second peak-particle velocity limit may be needed as shown by the considerable variability to be expected from use of the scaled distance formula.

Medearis (Ref. 12, p. 44), has plotted predicted peak-particle ground vibration velocity against distance for a 1,000-pound charge. The curve of the plotted data passes through the one-inch-per-second peak-particle velocity line at a distance slightly greater than 600 feet. Because geological conditions can effect the propagation of ground motion, as has been indicated in Gustafsson (Ref. 8, p. 217), some scatter of data around the curve of predicted ve-

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[6] Calculations: ANFO specific gravity (density)=0.8 gm/cc gm/cc×62.4=16/cu. ft. (standard conversion factor) $\pi r^2 xh$=volume of a cylinder. Therefore: $0.8 \times 62.4 \times 0 = \pi (.5)^2$ (7.1) = 278.41b $0.8 \times 62.4 \times \pi(.375)^2 (12.6) = 277.9$lb.

[7] ANFO specific gravity (density)=0.8 gm/cc gm/cc×62.4 (Standard Conversion Factor)=lb./cu.ft. (Standard Conversion Table) $\pi r^2 \times h$=volume of a cylinder. Therefore: $.8 \times 62.4 \times \pi(.5)^2$ (25.5)=1,000 lb. $.8 \times 62.4 \times \pi(.375)^2 (45.4) = 1{,}000$ lb.

locity can be expected, indicating that the one-inch-per-second limit may be exceeded or reached at distances close to 1,000 ft., if blast design is not employed. The 1,000 ft. distance limitation thus provides a safety factor to account for this scatter and to alert the operator that special precautions must be taken to prevent structural damage.

(3) *Waivers.* Several commenters stated that the 1,000 foot distance was acceptable, providing that the regulations specified the written waivers by occupants or owners of any structures within 1,000 feet of the blast site could be used to justify the lesser distances, instead of compliance with the rest of Section 816.65. Such waivers do not assure the regulatory authority that the operator will take the necessary special precautions to protect the public from the danger of flyrock and to protect the structures involved from possible damage caused by excessive ground motion or airblast. Therefore, this suggestion was not accepted.

(4) *Redundancy.* Other comments stated that the other provisions of the blasting performance standards, such as Sections 816.65(g), 816.65(f), and 816.65(h), adequately protected structures and the public, making the 1,000-foot/500-foot limitations unnecessary. The Office has carefully considered whether Section 816.65(f)(1)–(2) are merely redundant to other sections and has concluded that, to the contrary, these provisions are essential to a rational regulatory scheme for blasting. Section 816.65(f) establishes requirements for advance approval by the regulatory authority of particular blasting events by the operator, that paragraphs (c)(g) & (i), which are generally self-executing, do not ordinarily require. This advance approval requirement is important when blasting is conducted in close proximities to the types of structures and facilities involved.

Numerous comments to the Office indicated that, ordinarily, permit applicants cannot be expected to present detailed information on the frequency, quantities, and location of blasting in the appropriate portion of the application (30 CFR 780.13). The Office agreed that it may be impossible to accurately establish this level of detail until shortly before mining operations actually commence in the field. In addition, preblast surveys of structures in the area around the mine will not ordinarily be performed until after a permit is issued, so data on conditions of those structures suggesting the need for special precautions in the course of implementing the blasting performance standards will not be available in the initial stage of the permit process.

The Act, however, requires that mining operations not be conducted until the operator has borne the burden of proving ability to comply with applicable performance standards. (Sections 102, 506(a), 507(b), 508(a), 510(a)–(b) of the Act). As the operator will not be able to provide such a demonstration, in detail, during the formal permit application process, it is essential that regulatory authority scrutiny of blasting operations take place at some later point, prior to the conduct of blasting in relatively close proximity to those structures and facilities where the risk of harm is substantial. Thus, Section 816.65(f) is an important alternative to close scrutiny of proposed blasting operations during the permit application review/approval stage.

(5) *Basis for regulatory authority approval.* A few comments suggested removing the phrase "other appropriate investigations," from the rule, implying that a preblast survey under Section 816.62 is sufficient data for the regulatory authority to authorize a waiver of the distance limits of Section 816.65(f). Preblast surveys will not necessarily provide sufficient data, however, to determine whether the distance limitation should be reduced. First, preblast surveys are not necessarily required to assess existing physical conditions of structures. Survey reports may, but are not required to, specify how the operator intends to blast. Second, seismic or geologic investigations may be necessary or considered appropriate by the regulatory authority to indicate special conditions existing in the area around the blast site warranting special operational precautions. Third, to determine if airblast noise limits will be complied with, it may be necessary to develop information on weather conditions and proposed blasting procedures. All of these are elements, in addition to a preblast survey report, that may be needed by the regulatory authority before approval is granted under Section 816.65(f). Therefore, the phrase "other appropriate investigations" has not been deleted.

A few commenters suggested that a provision should be added that in no case should the distance be reduced if there was a probability that the ground vibrations or airblast noise would be increased by blasting authorized under Section 816.65(f). Such an addition would be redundant, however, as Paragraphs (c) and (i) already specify the maximum allowable peak-particle velocities and airblast noise levels. Authority to blast under Section 816.65(f) will not change these ground motion and airblast limits provisions and will not allow for less stringent ground motion and airblast limits to be followed.

(6) *Costs.* Some commenters said that the 1,000-foot distance limitation would impose unwarranted costs on the industry. A few commenters related the additional costs to the cases where land companies lease houses near mines, with provisions that the occupants must vacate within a 30-day notice. These commenters reasoned that, in these cases, the operator or land company would be forced to issue eviction notices to prevent complaints. The Office does not consider this to be a valid argument for eliminating this regulation. First, the commenters did not show that ordinarily structures and facilities within the distance limits will be owned by the operator. Thus, the distance limit is still important for those persons occupying or using structures or facilities not under the control of the operator within the specified limits. Second, to the extent that the commenters are correct (i.e., in order to comply with the blasting performance standards, persons inhabiting structures in close proximity to the permit area must be physically relocated), the regulations still should be retained so that the health and safety of those persons is protected. Third, the Office does not expect that such removal will ordinarily be required, because the industry should be able to obtain approval of the regulatory authority through establishing that blasting within the specified distances can be done in compliance with the peak particle velocity, air blast, and flyrock performance standards.

The remainder of the commenters predict that, because of doubt as to whether a permit to mine closer than 1,000-feet would be granted, operators will encounter difficulty in obtaining financing or will have to pay higher interest rates. This difficulty should be minimized, however, because the specific focus on the blasting performance standards will ordinarily occur after permits are issued and operators are about to start. Because the 1,000-foot limitation is intended as a distance at which the regulatory authority is to ensure compliance with the other provisions of the blast performance standards, the Office does not expect the permission to mine will be difficult to obtain. It is indeed expected that approvals will be granted in many, if not most, cases. Therefore, this should not be a substantial deterrent in obtaining financing for mining operations.

(7) *Blasting near deep mines.* Several commenters suggested that Section 816.65(g)(3) in the proposed rules be deleted, as unnecessary in view of the provisions of Section 816.79. The Office agreed that Section 816.65(g)(3) was redundant, given Section 816.79, and has, therefore, deleted the provision.

(8) *Seismic investigations.* The term seismic investigations has been added to Sections 816.65(f) and 816.65(g) in the proposed rules for clarification, since seismic investigations are an acceptable means of proving that an operator can comply with the blasting performance standards within a distance of 1,000 feet, as regards the peak-particle velocity limits of Sections 816.65(i) and 816.65(j). (See preamble to Section 816.67).

VIII. *Section 816(g) (816.65(h) (in proposed rule).*

A. In comments on the proposed regulations, several persons felt that flyrock restrictions are unnecessary. Some commenters felt that the restriction on casting flyrock to one-half the distance to the nearest structure illegally preempts operators' property rights. One commenter recommended a variable flyrock distance standard, based on the slope of the terrain around the blasting location. Some commenters suggested a stemming specification, rather than a flyrock restriction. Many commenters suggested the need for major revisions to this section for clarity and to eliminate redundancy. Based on comments, the following alternatives on Section 816.65(g) were considered, and alternative 1 adopted—

1. Rewrite the section for conciseness and clarity, eliminating the restriction on throwing rock more than half the distance to roads and railroads;

2. Delete or modify the restriction on throwing rock more than half the distance to the nearest structure;

3. Specify blast design requirements, rather than flyrock distance limits;

4. Permit exemptions from the distance provisions;

5. Delete the provision entirely.

B. *Analysis of comments and alternatives.*

(1) *Introduction.* Flyrock represents a catastrophic potential for harm to the public from blasting. (House Committee Hearings—*supra.* Part II, p. 283). Flyrock falling through the roofs of structures, cited in those hearings, has the potential to cause death and injury, in addition to structural damage.

(2) *Alternative 1.* Several commenters felt that portions of Paragraphs (1), (2), and (3) in proposed Section 816.65(h) were redundant. The Office agreed. The Section has been rewritten as one paragraph to enhance its clarity and eliminate unnecessary repetition of the phrase "no flyrock shall be cast" and the specific types of structures protected by this section.

In response to one commenter's suggestion, the reference to roads and railroads in the "one-half the distance" limitation has been deleted. If access to these areas is adequately guarded, as is to be required under Section 816.65(d), no danger from flyrock should occur.

(3) *Alternatives 2 and 5.* A commenter's suggestion for a graduated flyrock limitation based on the slope of the terrain surrounding the blast site was not accepted. A property owner needs the same degree of protection, in the form of a buffer zone, regardless of the terrain slope. Since airborne and groundborne flyrock are treated the same in this Section, the "one-half distance" requirement gives equal and adequate protection to all.

Flyrock is more difficult to predict than other blast effects. Limiting flyrock casting to within one-half the distance to the nearest occupied structures provides a necessary safety factor for people living at a mine permit perimeter. If a person lives 50 feet from the mine perimeter, and a blast is 1,000 feet from that perimeter, simply stating that the flyrock may not go past the perimeter would provide inadequate protection from both flyrock that initially lands near the perimeter and then rolls towards nearby structures, and from concussion and debris generated by landing flyrock.

Some commenters felt that it is impossible to control flyrock. This is not true. Flyrock controls, using the basic recommendations from Ref. 1, pp. 373-396, are common practices in the industry. (This reference covers, in detail, proper design for blasts.) If the burden is less than 25 times the blasthole diameter, the shot may become violent and excessive, and flyrock can occur. If the stemming distance is less than 0.7 times the burden an imbalance of forces can occur, resulting in excessive flyrock. Where midseams, voids or other zones of weakness occur in the burden, the blast energy will be released violently through these zones, creating concussion and flyrock. Stemming, rather than explosive, should be loaded in these zones to prevent flyrock. If a blast causes flyrock to be thrown closer than one-half the distance to a structure, the operator should be able to solve the problem, by increasing burden and stemming distances and paying close attention to zones of weakness in the burden.

A comment by a vibrations consultant that uncontrolled flyrock will occasionally occur was not accepted. Using design techniques spelled out in Ref. 1, pp. 382-395, and Ref. 8, pp. 83, 88, the operator can use sufficiently conservative designs to adhere to the provisions of Section 816.65(h). When blasting near residences, it will be incumbent on the blaster to exercise close control over blast design and pay close attention to the rock structure being blasted to reduce flyrock spread.

(4) *Alternative 3.* Some commenters suggested that blast design specifications be substituted for flyrock limitations, based on books identifying items of preferred blast design. However, detailed specifications for blast design to limit flyrock in all cases would be an excessive burden to many operators, because of the extreme variation in rock density, competence, and geology encountered on a national basis, and the lack of substantial data to show a high degree of correlation between each variable of blast design and a specific flyrock distance limit. Given this variation and lack of existing data base, the Office feels that it is preferable to specify required results and leave the method of compliance with the standard to the industry, based upon a choice among variables identified above as controlling flyrock.

(5) *Alternative 4.* Some commenters suggested that a provision be made for exemptions to the flyrock limitation, but gave no basis for this suggestion. Substantial exemptions to the limitation would present a hazard to the public. The regulatory authority will not be expected to know the specific structural aspects of the rock to be blasted when receiving permit applications, given the final rules' version of Section 780.13, in response to comments. Because the specific sizes and distances of flyrock will not be known, in detail, the regulatory authority would not be able to routinely make the analysis necessary for approval of exemptions. Further, such an exemption would constitute a total variance from this performance standard, contrary to the limit of Office authority provided by Congress. (See *In re Surface Mining Litigation,* 452 F. Supp. 327, 338-339 (D.D.C. 1978)).

Other Comments.

(1) One commenter felt the rock traveling along the ground should not be considered flyrock. Since rolling rock can be as hazardous as rock falling upon persons or structures, the provision for rock traveling along the ground was retained.

(2) On the question of pre-emption of the operator's rights, the Act does not allow a person conducting mining to operate within the confines of the permit area so as to cause damage or injury to persons in nearby areas. Sections 102 and 515(b)(15), of the Act.

(3) A commenter suggested changing "area of regulated access" to "safety perimeter." This was not adopted, because "area of regulated access" is a more specific term as it is tied to specification of "access areas" in Section 816.65(d).

IX. *Section 816.65(h) (Section 816.65(i) in the proposed rules).*

A comment was received recommending deletion of Section 816.65(i) from the regulations as unnecessary, alleging that "actual disruption and fracturing of the rock only takes place very close to a blasthole." This is certainly not true in the case of flyrock, which is documented in the legislative history, as described in the preamble to Section 816.65(f). Excessive flyrock could change the course of a small stream by creating barriers to the original flow of water in the stream and by initiation of rock slides in unstable pit slopes adjacent to streams. Moreover, the text of Section 816.65(i) comes directly from Section 515(b)(15)(C) of the Act, and clearly reflects the intent of Congress.

X. *Section 816.65(i), (Section 816.65(j) in proposed rule) Peak-Particle Velocity Limits.*

A. A large number of commenters objected to the one-inch-per-second limit for peak-particle velocity of ground motion. The majority of these comments recommended that the limit be placed at two inches per second, although others recommended levels as low as 0.2 inch per second. Other comments indicated that the proposed rule was ambiguous as to how compliance with the particle velocity standard was to be measured in the field. Some commenters recommended that this section be revised to specify the conditions under which the regulatory authority would monitor ground motion and the equipment to be used. Study of the comments received led to the consideration of the following alternatives:

(1) Retain this section as proposed without change;

(2) Specify that the maximum peak-particle velocity shall be as measured in any of three mutually perpendicular directions, or specify that the maximum peak-particle velocity is the maximum of resultant of three components which are measured in three mutually perpendicular directions;[*]

(3) Retain the limit of one-inch-per second peak-particle velocity vs. specifying a limit of up to two-inches-per-second peak-particle velocity vs. a limit as low as 0.2 inches per second;

(4) Eliminate any specific maximum peak-particle velocity and use an equivalent scaled distance (explosive weight/delay vs. distance to structure) only.

(5) Replace the maximum peak-particle velocity standard with a "structural response" criterion; and

(6) Require the regulatory authority to monitor blasts at a mine without notifying the mine, to use certain specified monitoring equipment, and to require that the operator use trained monitoring personnel versus not providing for such requirements on monitoring.

After consideration of these alternatives, the Office decided to retain the one-inch-per-second peak-particle velocity, specify that this limitation is to be measured in any of three mutually perpendicular directions, and to reject other alternatives.

B. *Analysis of Comments and Alternatives.*

(1) Some of the comments received reflected confusion as to the fundamental purpose of this section. These commenters appeared to criticize the one-inch-per-second standard on the theory that the adoption of this standard is an attempt to protect against not only property damages caused by blast ground vibrations, but also against causing any annoyance to people by emotional distress.

As later discussion will explain, the one-inch-per-second standard is based principally on protecting property from damage, although it should also reduce the level of human emotional distress caused by ground vibrations. Bulletin 656 (Ref. 14, pg. 28), based on the Salmon nuclear event, states that an estimated 35 percent of all families will complain when exposed to ground vibrations of two-inches-per-second, and 18 percent will complain at one-inch-per-second. Although frequencies and durations for nuclear blasts are different than for conventional blasts, some similar complaint reduction should be expected in coal mining. Therefore, the standard being adopted is anticipated to reduce emotional distress somewhat, although not completely prevent it.

(2) *Alternative 2*—One commenter approved of selecting the "resultant" form of measurement of peak-particle velocity for ground vibration. As the Office does not intend that the *resultant* method of measuring the minimum peak-particle velocity be required, Section 816.65(i) was modified to clarify the method of measurement.

The Office has decided that the resultant method should not be used, principally because that method has not been used in collection and analysis of the data in the literature upon which peak-particle velocity standards for mine blasting have been based. All peak-particle velocity data presented in Bureau of Mines Bulletin 656, (Ref. 14, pp. 93–103), was measured as the maximum in any of three mutually perpendicular directions. Therefore, most of the work correlating peak-particle velocity from blasting in mining with structural damage has been done with the velocity determined by measuring the greatest velocity in any of three mutually perpendicular directions, without use of the resultant method.

Investigators working on a relationship between blasting ground vibrations and structural damage continue to determine maximum recommended peak-particle velocity as that measured from any of three mutually perpendicular directions (Ref. 19, pp. 12–13). The historical data pool on ground vibrations and related damage is all based on measurements taken in three mutually perpendicular directions, as opposed to vector sum measurements. Therefore, the three-component system is the only one on which a vibration regulation can logically be based.

(3) *Alternative 3*—The Office received a wide range of comments as to the level at which the peak-particle velocity standard should be set. Many commenters argued for a level above one-inch-per-second, most of these recommending two-inches-per-second, which was the prevailing industry standard prior to promulgation of the Office's interim regulations in December, 1977. Some commenters urged that the standard be set below one-inch-per-second, arguing that structural damage and/or emotional distress cannot be eliminated, unless peak-particle velocity is reduced to a level as low as 0.2 inch per second.

(a) Some commenters suggested that the two-inch-per-second standard be adopted, alleging that an operator would subject blasting personnel to a great hazard with the one-inch-per-second standard because blasting would have to be conducted more often in order to break up the same amount of overburden. Analysis of this claim does not reveal that it is substantial.

The primary method for reducing ground motion from mine blasting is to reduce the charge weight of explosives per delay (Ref. 7 at 93; Ref. 14, p. 73; Ref. 13, pp. 8–9). In most instances, the same amount of rock can be broken in a single blast by increasing the number of delays used in a round of blasting. Commercial delays, in conjunction with sequential timers, provide between 100 and 200 delay intervals per blast round. (Ref. 17, pp. 1–2). Readily available sales literature indicates that cap manufacturers market 20 different delay periods. Furthermore, detonating cord delay-connectors can be used in series to provide an essentially unlimited number of delay periods per blast. Delay blasting switches (sequential timers) can be used to increase the number of delay periods available when using electric controls (Ref. 12, p. 9).

[*] A component is a velocity measurement taken on a pre-determined orientation. The three common components are vertical (v), taken in true vertical orientation; radial (r), taken on the line from the blast to the measurement point; and transverse (t), taken on the horizontal line perpendicular to (r). The resultant is the vector sum of v, r, and t, and is equal to $\sqrt{v^2 + r^2 + t^2}$.

A few commenters alleged, however, that increasing the number of delays requires reducing drill patterns, thereby reducing the size of individual blasts and requiring more total number of blasts. Ref. 1, pp. 373-397, however, makes no provision for needing to reduce blast patterns because of an increased number of delays. (See also, Ref. 7 at 93-97 and Ref. 12 and 17, *supra*. Moreover, the extent that the commenter's assertion might be true, the Act requires precluding damage from ground vibrations.

One commenter also stated, without providing demonstration, that by increasing the number of delays, there is an increased chance of propagation between charges which could lead to damage at closely adjacent buildings. (Propagation is the initiation of a charge by means of an earthborne or airborne shock wave radiating from a nearby detonation.) The blasting agents used in surface mining today are, however, very insensitive to accidental initiation and not subject to charge-to-charge propagation in surface blast designs. (See, e.g., Ref. 7 at 95).

(b) Some commenters that recommend the two-inch-per-second level relied on technical literature or their own experiences to argue that a two-inch-per-second standard is "adequate" for protection of structures against blast damage. However, none of the commenters who cited their own experiences submitted detailed data showing comparisons between damage and peak-particle velocity from blasting in representative sets of mining blasting situations. Without those data, the Office could not evaluate the claims of those commenters who cited personal experiences, which in any event, appear contrary to the weight of data available in the relevant literature.

Technical literature cited by commenters urging the two-inch-per-second standard was primarily Bulletin 656 (ref. 14), Medearis (ref. 12) and Laadegard-Pederson (ref. 10). Bulletin 656, however, states that the two-inch-per-second standard will protect structures from damage only 95 percent of the time. (Ref. 14, p. 73). This is not an adequate standard, because the Section 515(b)(15)(C) of the Act requires prevention of damages. Medearis does not support the two-inch-per-second criterion, but a complex structural response criterion, discussed later. Ref. 10 is a review of various other papers and presents no new data.

One other commenter recommended eight additional publications for study of the peak-particle velocity limitation. Four of these involved only nuclear explosion data, not coal mining, and are not sufficient for establishment of a coal mining standards on a national basis.

The fifth article cited by the commenter was Bulletin 656, (ref. 14) which has already been discussed. The sixth was Bulletin 442, the data from which form part of the analysis in Bulletin 656. The other two suggestions were references 23 and six, both of which are addressed elsewhere and which support the one-inch-per-second standard.

Another commenter suggested that Wiss and Nicholls, ASCE, 1974, supports a two-inch-per-second standard. However, this publication concerns a very limited test, performed with only a few blasts near one house in a hard-rock mining district, and thus is not a sufficiently comprehensive piece of work on which to base a national surface coal mine blasting standard, because of the limited scope of the study and the difference in rock type; i.e., hard rock versus the soft sedimentary rocks associated with coal mining.

Another commenter suggested using Bureau of Mines RI 8168, by Siskind, Stachura and Radcliffe. However, this publication does not deal with structural damage criteria of any type from ground vibration.

(c) When published in 1971, Bulletin 656 was the most comprehensive and best information available on the peak-particle velocity limit. Bulletin 656 recognized (at p. 73) that the probability of damage for a two-inch-per-second vibration would be about five percent. Commenters pointed out that this probability estimate was based on four instances ("points") where damage could be shown at levels below two-inches-per-second and that these points had the greatest standard deviations.

However, none of the literature cited by the commenters established that no damage will occur at the two-inch-per-second level. Medearis (ref. 12) feels that peak-particle velocity in itself is not a good criterion, although he is the only published authority in our records who takes this specific position. Further, on page 87 of Ref. 12, Meaderis states that his criterion would be more strict than current practice with regard to one-story structures.

Another commenter said that repeated blasting will not cause fatigue damage. The Office has never contended that this was a factor. The damage from repeated vibration discussed in the preamble to the proposed final rules refers to induced settling through compaction of material on which a house is built. Vibration is a standard civil engineering technique for compaction of material. Vibration damage data typically are of a single event type and thus do not consider accumulated effects from multiple blasts. One of these effects could be induced settlement. This is a contributing factor, although not a major one to lowering the limitation from two- to one-inch-per-second, i.e., several small vibrations may do as much damage as one larger one.

(d) One of the commenters who criticized the one-inch-per-second standard recognized that the two-inch-per-second standard is not really adequate to preclude damage. A careful review of the technical literature, as a whole, shows that the one-inch-per-second limit is what is necessary to preclude damage to buildings from blasting. The best available information clearly shows that damage to property may result from blasting vibrations below two-inches-per-second. Indeed, this literature recognizes that even a limit of one-inch-per-second may not absolutely protect structures from minor damage.

Integration of data from Dvorak (Ref. 6) yields 32 points of damage below two-inches-per-second. Gustafsson (Ref. 8. pp. 207-210), using information developed from over 100,000 blasts, recommended a safe level for peak-particle velocity down to 0.7 inper-second, depending on geologic conditions, and a threshold of damage as low as 1.2 inch-per-second. This is a very impressive volume of actual blast data, and, by its very number, encompasses a wide variety of conditions similar to that present in coal mining across the U.S. Tynan (Ref. 23. p. 19) recommends a peak-particle velocity of 0.75 inch-per-second. These sources thus indicate that a particle velocity specification below two-inch-per-second is necessary in order to protect the majority of structures from damage, and that one-inch-per-second is a reasonable criterion.

(e) Some commenters alleged that the use of the one-inch-per-second limit would be burdensome on operators. Costs will probably be increased, in some cases, because of additional delays required and a small amount of additional loading time. Based on a comparison of use of a scaled-distance formula of 50 (to achieve two-inch-per-second) to use of a scaled-distance formula of 60 (to achieve one-inch-per-second), the charge weight per delay will have to be reduced about 30 percent.[9]

$60 = 1{,}000/\sqrt{W}$	$50 = 1{,}000/\sqrt{W}$
$\sqrt{W} = 1{,}000/60$	$\sqrt{W} = 1{,}000/50$
$\sqrt{W} = 16.667$	$\sqrt{W} = 20$
$\sqrt{W} = 278$ lb/delay	
$\sqrt{W} = 400$ lb/delay	
$278/400 = 70\%$	

If an operator is currently blasting at or near two-inches-per-second, he

[9] Calculated by comparing the two scaled distance equations: SD = distance/Charge weight.

Example: [*]Calculation comparing scaled distances of 50 to 60 using an absolute distance of 1,000 feet.

would have to use approximately 40 percent more delay intervals to achieve the one-inch-per-second based on use of the scaled-distance data in Ref. 14, p. 17. Delay intervals, however, are not a major component of the total costs associated with blasting.[10] These additional costs will, however, be offset by reduced damage to structures and reduced human annoyance. Further, some additional cost is not a valid reason for allowing for blasting with a significantly greater probability of structural damage and human distress, since Section 515(b)(15) of the Act requires that blasting be conducted so as to "prevent" damage and injury. Moreover, no commenter indicated that surface mining would have to cease in any locations because of increased cost associated with the Office's blasting regulations.

One commenter complained that a large coal company had recently purchased a new drill to acquire capability of drilling smaller holes to meet the one-inch-per-second standard and the entire cost of $250,000 for the drill was an expense in imposing this standard. However, that drill will replace drilling time for older, larger drills and thus the older drills will last longer. Also, the company will have more operational flexibility, by the ability to drill more types of holes. Moreover, there was no way for the Office to calculate accurately how much the drill purchase cost the company in the long run. When lower maintenance (resulting from a newer drill), increased operational flexibility (resulting from an extra drill), fewer complaints and damages (resulting from lower ground vibrations), and better fragmentation (resulting from smaller holes with closer spacings) are considered, the company could even conceivably have saved money by making this purchase. (See, e.g., Ref. 7 at 95–97.)

(f) A few commenters recommended lowering the allowable vibration level to below 1 inch/second. In most of these comments, reliance was put on information developed by a State agency and the recommendations contained in Appendix C of the Committee on Bioacoustics and Biomechanics Report (Ref. 5). As was pointed out in comments by an industry commenter, Appendix C was not an actual recommendation made by the CHABA working group, but was included as background information. The material quoted in Appendix C of the report was a summary of the 1976 draft standard, International Standards Organization, Technical Committee 108, Standards Committee 2, Working Group 3. The actual recommendation of the CHABA report was that since structural damage had been observed to levels as low as one-inch-per-second, even that level should be regarded as one of potentially adverse exposure.

(g) A few comments stated that the one-inch-per-second standard was arbitrary or discriminatory against coal mining as compared to other methods of mining. The above material demonstrates that the standard is not arbitrary. Nor is it unduly discriminatory, since the Act requires establishing a standard to prevent property damage and injury from surface coal mine blasting.

(4) *Alternative 4, Use of Scaled-Distance Formula Only.*

One commenter proposed that the ground vibration criterion be eliminated completely, appearing to recommend that all reliance be placed on explosive charge weights and distance formula. Although charge weight-distance formula is one method of protecting structures from ground vibrations (Ref. 14, pp. 70–74 and Ref. 13, pp. 8–9), use of seismographs to predict adequate charge weights is also acceptable. Section 816.67(b) provides that a different charge weight-distance formula can be used, if it can be shown that the maximum peak-particle velocity is not being exceeded. Thus, the Office decided not to accept this comment.

(5) One commenter objected to the provision in Section 816.65(i) that the maximum allowed peak-particle velocity is to be lowered below one-inch-per-second, if required by population density, age of structures, geology, hydrology, or frequency of blasts. The commenter did not feel that a relationship between those elements and ground vibration had been demonstrated.

Gustafsson (Ref. 8, p. 208) found that older structures cannot withstand ground vibrations as well as newer structures. Some evidence does exist that the frequency of blasting does have an effect on structures (Ref. 8, p. 209). Density of population may require a lowering of the ground vibration limitation because of the possibility of increased human distress. Ref. 14, p. 28, shows that the percentage of persons affected by distress is a function of the level of ground vibrations. In high density population areas, a larger number of persons will be distressed, since the number of persons affected is determined by multiplying the percentage of persons expected to be affected by the number of persons in a given area.

In some cases, geologic structure may cause vibrations to propagate more efficiently through the ground and cause more complaints or damage than normal. With regard to effects on hydrology and water supplies, it is clear that blasting can adversely affect ground waters by rock fracturing. (Ref. 7, at p. 2; Ref. 26 at p. 25; Ref. 27, Vol. 1, at p. 120). The regulatory authority, therefore, needs to be provided with authority to specify a lower peak-particle velocity, where use of one-inch-per-second is insufficient.

(6) One commenter objected to the one-inch-per-second standard, saying that mine-caused blasting damage is due to poor enforcement of the two-inch standard, rather than to actual ground vibration levels at two-inch-per-second. The data cited in this discussion, particularly Dvorak (Ref. 6) Gustafsson (Ref. 8) and Tynan (Ref. 23) show, however, that because damage and distress can occur below two-inches-per-second, one-inch-per-second is needed.

(7) *Alternative 5.* The Office received a number of comments which objected to the adoption of a peak-particle velocity standard which is based upon the assumption that all structures respond in the same manner to a given ground vibration, as opposed to a standard which is derived from analyses leading to a "structural response criterion." These comments urged the latter criterion be used, based on the work of Medearis (Ref. 12) to determine allowable maximum vibration levels.

Medearis' work involves the determination of how a structure will respond to a ground vibration. This response will vary with the frequency of the ground vibrations, the height of a building, the type of ground on which the structure is built, and the type of construction and age of the structure.

Medearis' system requires that the natural frequency of structures be determined by test blasting, along with spectral response curves showing the response of the structure when excited by different frequencies and amplitudes of ground vibrations. The predominant frequencies of the ground vibration, which will vary with the distance from the blast, must also be determined.

It is important to note, too, the Medearis' studies were not performed at actual blast sites. Medearis' studies involved records of 74 blasts provided by

[10] No additional detonating cord would be required to meet the one-inch-per-second standard since the hook-up of explosives would be the same. Some additional delays would be interposed on the surface, but these are less than $1.00 each. In the case where the operator is already using in-hole delays, no additional delays would be needed, only a wider variety. No additional loading time would be required because the same powder loads would be used. There might be a slight insignificant increase in time due to delay pattern design, care in proper loading, etc., If an operator chose to load different delayed charges within a borehole to reduce the charge weight per delay, this would take a little extra time. The increased time, even with an extremely complex blast, should amount to less than 5 percent; increased cost of materials (delays, cord, etc.) would be almost nil.

Vibra-Tech Engineers (Ref. 12, p. 20) and simulated structural vibrations induced by "slamming doors or bumping appropriate structural components." (Ref. 12, p. 4). The structures studied were not those involved in the blasts. His simulated vibrations are not truly representative of blasting events because they excite only selected portions of the structure whereas blast vibrations excite the entire structure. To fully develop the Medearis' system, actual field blasts with associated ground vibration and structural vibration measurements are needed.

As Medearis states (Ref. 12, p. 87) this technique is based on a limited amount of data and requires further research. In contrast, the one-inch-per-second criterion used by the Office is based on a large volume of published data (ref. 6, 8, and 17) and Bureau of Mines unpublished data which correlate damage directly with ground vibration data, and do not take structural response into account.

Further, some commenters indicated that computer analysis is necessary for using the structural response system in each particular situation, making this a cumbersome and costly procedure, in comparison to the peak-particle velocity limitation, which uses the scaled distance formula or seismographic readings for implementation and compliance purposes. Moreover, given that detailed blasting plans cannot be provided at the permit application stage, there would be no necessary point in the regulatory process where the regulatory authority would have time to conduct an in-depth review of the computer analysis results.

The Office, instead, has decided to use a system involving the alternatives of scaled-distance or seismographic readings, which has been widely used throughout the industry for many years and can continue to be applied under the regulations without the necessity of Medearis' system for gathering site-specific structural data and engaging in computer modeling.

(7) *Alternative 6.* Finally, it was also argued that the Section should be amended to provide that the regulatory authority should not notify the mine when ground vibrations are being monitored, that the regulatory authority use only certain equipment and trained personnel, and that the latest equipment should be required for use by well-trained personnel. The Office, however, prefers to leave these enforcement particulars to the regulatory authority in individual cases, based on a case-by-case use of the best testing methodologies and whether notice to the operator may be needed. It was not felt that further modification of this paragraph was warranted.

XI. *Section 816.65(j) (Section 816.65(k) in proposed rules).*

(A) Several commenters requested that this provision be modified to afford additional relief from the one-inch-per-second peak-particle velocity limitation at certain structures. Several commenters suggested allowing for waiver of the peak-particle velocity limits at any location under control of the operator or at any property of any other person willing to grant a waiver of the peak-particle velocity limit. Section 515(b)(15)(C), of the Act however, requires that blasting be limited to preclude dangers to underground mines and to surface or underground waters. Thus, allowing for waiver of the peak-particle velocity merely at a particular location would not satisfy the requirements of the Act (See Refs. 26,27), because:

1. An underground mine might be located at or under the surface location of the person agreeing to the waiver, and

2. A spring or stream used by downstream or downgradient persons might pass through or under location of a person agreeing to the waiver for structures on adjacent property overlying surface or groundwaters.

Therefore, the Office decided it could not authorize waivers of the maximum peak-particle velocity limit, without preserving restrictions to protect underground mines and surface and ground waters. As a result, any waivers must be appropriately based on pre-conditions, as specified in Section 816.65(i).

B. Some commenters felt that an operator should not be required to protect his or her own structure from vibrations merely because the structure was leased to another party. If the requirement protecting a lessee were dropped completely, a lessee of the property owned by the operator would lose the right under the Act to protection from discomfort and damage from ground vibrations caused by blasting. Thus, the waiver provision in the final rule was adopted to protect the lessee's rights and still permit the operator to seek relief from the basic requirement of the regulation.

C. Some commenters felt that a structure owned by the operator, even though it is off the permit area, should be exempt from the one-inch-per-second limitation. The Office agrees that the location of the property with respect to the permit area should not be a determinant in authorizing waivers to the permittee. The final rule reflects this.

D. Several commenters felt that the one-inch-per-second limitation should be subject to waiver by a private homeowner or lessee thereof, in addition to structures owned by the permittee. Allowance for these types of waivers, however, can easily subject homeowners and their lessees to undue coercion by the mine operator. Additionally, homeowners may waive rights to protection of their property without realizing the significance of this action. The average lay person is not likely to have adequate technical knowledge for intelligent selection of an alternative peak-particle velocity ground vibration level under a waiver. In comparison, the *permittee* should have employed competent experts to conduct blasting and upon whom the permittee can rely for advice in deciding whether to use the waiver of the one-inch-per-second limit. Thus, the Office feels that a provision for a waiver from private homeowners or their lessees, other than the permittee, is unjustified.

XI. *Section 816.65(k) and (l) (Sections 816.65(l), (m) of proposed rules).*

A. Several comments were received on the use of a scaled-distance formula of 60 as an acceptable means of compliance with the one-inch-per-second peak-particle velocity limitation of Section 816.65(i). As a result of the comments, the following alternatives were considered, and alternative 1 was adopted.

(1) Retain the text of the proposed rules;

(2) Reduce the scaled distance equation to 50;

(3) Use a scaled distance greater than 60.

B. (1) Scaled distance is an expression which relates the absolute distance from a blast to a structure to the square root of the charge weight of explosive per delay. Although vibration data tend to have considerable scatter, equivalent scaled distances tend to give similar vibrations. The scaled distance equation is as follows:

$$SD = R/\sqrt{W}$$

Where R is the distance from the blast to the structure in feet, and W is the charge weight per delay. The following examples will illustrate this. Given distances of 1,000 feet and 5,000 feet, what is the maximum charge weight per delay that can be used in complying with a scaled distance of 60? A scaled distance of 50?

	1000 ft.	5000 ft.
SD = 60	$60 = 1000/\sqrt{W}$	$60 = 5000/\sqrt{W}$
	$\sqrt{W} = 1000/60$	$\sqrt{W} = 5000/60$
	$\sqrt{W} = 16.667$	$\sqrt{W} = 83.333$
	W = 278 lb	W = 6944 lb
SD = 50	$50 = 1000/\sqrt{W}$	$50 = 5000/\sqrt{W}$
	$\sqrt{W} = 20$	$\sqrt{W} = 100$
	W = 400 lb	W = 10,000 lb

(2) *Analysis of Comments and Alternatives*

(a) *Alternative 2.* Several commenters stated that a scaled distance of 50 should be adopted, based either on ref. 14 or on the commenter's practices. Ref. 14 discussed use of 50 as a

basis for meeting a peak-particle velocity standard of two-inches-per-second, and it was the information in that bulletin that set the established practice.

Because the particle velocity limitation is being reduced to one-inch-per-second, a higher scaled distance was required for compliance with this lower limitation. The scaled distance of 60 was derived from the combined velocity data, p. 71, Ref. 14, The Office recognizes that the 60 scaled distance is an empirically derived number with a built-in safety factor, and therefore, permits the operator to seek relief by deriving a site-specific scaled distance factor, based on seismographic data from a particular blast site, subject to approval by the regulatory authority. (Section 816.67(b)).

(b) A few commenters stated that a scaled distance of 50 will keep vibrations in the 0.5 inch per second range. The data on page 71 of ref. 14 refute this assertion. In any event, if the operator has a property at which the scaled distance of 60 is unduly restrictive, he may seek relief under Section 816.67(b), by use of site-specific seismograph data.

(c) Several commenters argued that the scaled distance of 60, when compared with the scaled distance of 50, results in a reduction by 30 percent of the weight of explosives to be detonated at one time. This is true, but the fact remains that the scaled distance of 60 is necessary to keep vibrations below one-inch-per-second, unless the operator seeks relief under Section 816.67(b) or meets the higher scaled distance by emloying more delays in the blast.

(d) *Alternative* 3. A State environmental agency recommended that the scaled distance should be 100 for compatibility with one inch per second, but provided no detailed data to substantiate this. The combined data on page 71 of ref. 14, furthermore, based on recordings of 159 blasts in 24 operations, refutes this contention.

(e) *Other comments.*

(1) A commenter stated that no scaled distance is adequate to protect against a specific level of ground vibrations because of variations in blasting-cap firing times. (Ref. 23, pp. 17, 21, 24 and 27). Manufacturers and the industry have been aware of this firing time scatter since the development of delay caps. However, the data enumerated above, from which the 60 scaled distance was derived, are empirical data obtained from blasts using detonators with assumed scatter in firing times. Thus the cap scatter is automatically incorporated and accounted for by the results of the data analysis supporting the 60 scaled distance.

(2) One commenter recommended that the specification that the scaled distance be determined by reference to the distance to the nearest structure should be clarified, to be the "shortest distance that seismic waves would propagate through the earth or along the surface of the earth," because the current wording is believed to be too conservative, in some cases, for complex terrain. However, the scaled distance has historically been measured on a horizontal plane analagous to land surveying techniques. (Ref. 25, pp. 405-408; Ref. 13, p. 7; Ref. 14, pp. 70-72) If the scaled distance of 60 is too conservative in certain instances in complex terrain, relief is available through Section 816.67(b).

(3) Several commenters suggested rewording from "within any eight-millisecond period" to "with at least eight milliseconds' separation in time from *all* other detonations." The Office rejected this suggestion because it would unduly restrict an operator's options in blast design. The premise of the use of delay intervals (Ref. 13, pp. 8, 9 and Ref. 14, pp. 40, 70, 71) is that any amount of explosive detonated within an individual interval may act as a single charge in terms of producing vibrations. For an efficient blast design, an operator may want to use delay intervals of less than eight milliseconds. This is permissible under the scaled distance concept, as long as the maximum weight of explosive fired within any eight-millisecond period is used in the scaled distance calculation.

(4) A few commenters argued that the eight-milliseconds figure is not specified in Bulletin 656. This is true, but the data used in calculating the eight-millisecond specification are accounted for and used in calculations of the scaled distance formula in Bulletin 656.

XIII. *Proposed Section 816.65(n).*

A few commenters requested that the provision in the proposed regulations for limiting the duration of ground vibrations be deleted. Based on the review of the comments, the Office decided to accept this recommendation.

The commenters recommended deletion of this section on the grounds that it is unnecessary, confusing, and simple to circumvent. The Office agrees that the Section is unnecessary. The Office's rationale for proposing this Section was that ground vibrations of one-second duration constitute steady-state conditions. This contention cannot, however, be supported. This Section was adopted from a State regulation. Subsequent comments from that State revealed, however, that the rule is not based on sufficiently accurate and available data. Many delay systems designed to have vibration durations of longer than one second have been in use for years with no reported problems, as the commenters noted. Spreading vibrations over a longer time period is one of industry's most effective ways of reducing peak vibrations, and thus this Section would be counter-productive to insuring that peak vibrations be minimized under other paragraphs of these Sections.

XIV. *Proposed Section 816.65(o).*

Numerous commenters felt that the requirement for regulatory approval of the use of delay systems combining surface and in-hole delays, as specified in the proposed rules, should be deleted. Based on rationale provided with these comments, the Office decided to delete this provision.

Most of the commenters stated that combination surface/in-hole delay systems have become common practice for reducing blast vibrations. They felt that the scaled distance formula in Section 816.65(m) and the one-inch-per-second peak-particle velocity limitation in Section 816.65(j), is adequate, so that a requirement for specific regulatory authority approval to use combination surface/in-hole delays is an unnecessary burden. Several commenters felt that the Office is needlessly specifying to industry how to achieve the required results, instead of simply specifying the required results.

A few commenters felt that an additional time delay criterion/or continuous monitoring requirement should be added. However, according to Ref. 17, pp. 1, 2, these combination systems have been widely used, with excellent results, to control ground vibrations. Placing additional restrictions on their use will discourage operators from using the latest available technology to control vibrations. The Office argues that the public is adequately protected by Sections 816.65(l) and 816.65(i) and that approval of combination delay systems by the regulatory authority is a significant burden, without benefit.

§ 816.67 Use of explosives: Seismograph measurement.

(A). A number of individuals or organizations submitted comments in this section objecting to various provisions. A few of these stated that the frequency response of structures and the conditions of structure should be considered to allow for variances for use of the prescribed charge weights of the scaled distance (requirements of Section 816.65(i)) and (k). Some commenters stated that Section 816.67(c) should be deleted and one commenter stated that the provisions of Section 816.67(c) should be used only if a complaint has been made by a citizen. One commenter felt that significant economic risk should be considered in deciding when a waiver of the scaled dis-

tance formula is allowed. One commenter stated that the "remoteness of an area" should also be a consideration for allowing for waiver of the scaled distance formula, and another felt that because seismograph monitoring may be required, a scaled distance of 50 should be used. One commenter wanted this Section's specification of a peak-particle velocity of one inch-per-second replaced by two-inches-per-second.

Consideration of the comments led to the following alternatives, and alternative 1 was chosen.

(1) Clarify Section 816.67(c) to provide that when the regulatory authority requires the collection and recording of seismograph data, it also has the authority to specify the monitoring location. Leave other provisions unchanged.

(2) Allow structural response, economic risk, or "remoteness" to be used as additional factors to authorize waivers of the scaled distance formula under Section 816.67(a).

(3) Delete the authorization to the regulatory authority to require seismographic readings or limits its application.

(B). (1). Several commenters stated that the frequency response of structures (Ref. 12) and the condition of structures should be considered when allowing for waivers of the scaled distance tables based on seismographic measurements. The above discussion on the one-inch-per-second peak-particle velocity limitation Section 816.65(i) provided detailed reasons for not adopting a system of limiting ground vibrations from blasting, based upon the Medearis theory of structure response. It is not adequately developed for use at this time, is very complex, and requires costly, time-consuming analyses. Condition of a structure is not grounds for changing the allowable peak-particle velocity. Section 816.65 (j) and (k) provide that the one-inch-per-second particle velocity may not be exceeded at any structure not owned or leased by the permittee.

(2). A few commenters stated that Paragraph 816.67(c) of these Sections should be deleted because it confers too much discretion on the regulatory authority to require seismographic readings by permittees. However, to provide a mechanism for enforcing the one-inch-per-second velocity limit, it is essential that the regulatory authority have the option to require seismograph measurements, where questions arise as to the operator's compliance with the limit by use of the scaled distance formula. It is not expected that the regulatory authority will use its discretion arbitrarily.

(3). One commenter stated that Section 816.67(c) should be used only when there has been a complaint made to the regulatory authority about a permittee's blasting. No reason was given by the commenter for this. It is anticipated that this provision will be applied mostly where there have been complaints. However, where blasting records or inspectors' observations cast doubt as to the operator's compliance with the one-inch limit by use of the scaled distance formula, the regulatory authority needs the option to require measurements because use of the scaled distance formula is not considered to provide absolute protection against exceeding a specific ground vibration level. (Ref. 14.)

(4). One commenter felt that Section 816.67(c) should be employed only where there is significant economic risk. A determination of economic significance would provide a vague standard which would be difficult to administer, particularly in the field. Detailed economic data, including property valuation materials, would be required. This data would be costly to assemble and access. Further, Sections 515(b)(15)(C) of the Act requires the prevention of damage to property whether or not based on a "significant economic risk."

(5). One commenter felt that operators in remote areas should be permitted to use a scaled distance formula larger than that required to protect against one-inch-per-second. Remoteness, however, has no bearing on structures, since all structures must be protected. In fact, operators in remote areas should have the least difficulty in complying with the scaled distance requirements and the one-inch-per-second velocity limitation. Stuctures in remote areas tend to be located further from blasting, thereby allowing more explosives to be used before exceeding the one-inch-per-second velocity limitation at those structures.

(6). One commenter stated that, since we have provided in Section 816.67(c) for the regulatory authority to require monitoring of all shots, the scaled distance of 50 should be adequate. The use of seismic monitoring and the use of the scaled distance equation are two separate options for compliance under Section 816.65. As is explained in the preamble to Paragraphs 816.65(k)–(l), the scaled distance of 60 is necessary to meet the one inch per second peak-particle velocity limit, if seismographic data is not obtained.

(7). One commenter wanted the one-inch-per-second specification of Section 816.67 replaced by two-inches-per-second. For consistency between the standards of Section 816.65 and 816.67, the one-inch-per-second must be retained.

(8). A few commenters had no criticisms of Section 816.67 but suggested clarification. In order to clarify the provisions of Section 816.67, Paragraph (c) has been revised to reflect that when the regulatory authority requires that a semismograph record be made, it will also have the authority to specify appropriate data collection locations, if necessary.

§ 816.68 Use of explosives: Records of blasting operations.

(A). Numerous commenters suggested various changes in the information required in the blasting record in the proposed regulations. A review of the comments resulted in consideration of the following alternatives. Alternatives 4 through 8 were adopted.

(1) Retain the text of the proposed rule;

(2) Establish a minimum distance specification for documenting particulars about the nearest structures (Paragraph 816.68(d));

(3) Change the wording of Section 816.68(k) concerning the charge weight within any millisecond period;

(4) Add temperature, wind direction, and approximate wind velocity as data requirements to Paragraph 816.68(e);

(5) Add a requirement for making a sketch of the delay pattern used;

(6) Change the wording of Paragraph (m) for clarity.

(7) Replace "person" with "operator" in Section 816.68(a);

(8) Add a requirement to record the number of persons used in the blasting crew.

(B). (1). Several commenters suggested that documentation of the nearest structure be limited to structures within one-half mile and one commenter suggested a distance of 10,000 feet. The rationale given for the ½ mile distance was "to be consistent with the Act." However, the Act clearly intends that all structures be protected, regardless of the distance from the blast. The distance to the nearest structure, whatever the actual distance, is necessary to assume that the structure is adequately protected, by either the scaled distance factor or a seismograph record.

(2). A few commenters suggested changing the wording of Section 816.68(k) to "explosives detonated with at least eight milliseconds' separation in time from other detonations." Based on the detailed rationale discussion in the preamble under Section 816.65 (k) and (1), the Office has decided not to make this change, because delay intervals of less than eight milliseconds are permissible under the scaled distance concept, as long as the maximum weight of explosive fired within any eight-millisecond period is used in the scaled distance calculation.

(3). One commenter suggested that temperature be added as as specific requirement in Section 816.68(e). Ref.

14, p. 65, and Ref. 13, p. 11, state that airblast propagation is influenced by temperature and wind. So that the blast record will be useful in determining possible causes for high airblast noise levels, the wording "including temperature, wind direction, and approximate velocity" has been added to Section 816.68(e).

(4). Section 515(b)(15)(B) of the Act requires that the blast record contain "the order and length of delay in the blasts." The simplest and clearest way to accomplish this is through a sketch of the delay pattern. Therefore, a provision for this has been added to the blast record requirements.

(5). For clarification and consistency, Paragraph (m) now reads "initiation system" and the word "person" is replaced with "operator" in Paragraph (a). The name of the blaster-in-charge is already required in Paragraph (c). To check compliance with 30 CFR Part 850, which specifies the allowable maximum number of persons on individual blasting crews, a requirement has been added to record the number of persons in the blasting crew.

(6). One commenter felt that having a blast record open for public inspection is undesirable because it would be misunderstood and misinterpreted. Section 515(b)(15)(B) of the Act specifically requires maintaining the availability of records for public inspection.

§§ 816.71–816.74 Disposal of excess spoil.

30 CFR 816.71–816.74, along with the definitions of "head-of-hollow" and "valley fills" in Section 701.5, regulate excess spoil. Section 816.71 lists general requirements that apply to all fills, including those dealt with in Sections 816.72–816.74. These requirements are basically safety and environmental protection standards which the engineer designing the disposal area must satisfy. If the particular spoil disposal area does not fall within the definitions of head-of-hollow or valley fill, the requirements of Section 816.71 are the governing regulations. If the spoil disposal area falls within the definition of valley fill, then in addition to the more general requirements of Section 816.71, the valley fill must also meet the requirements of Section 816.72. If the particular spoil disposal area falls within the definition of head-of-hollow fill, then in addition to the more general requirements of Section 816.71 and 816.72 the fill must comply with Section 816.73. Section 816.74 provides an alternative method of constructing a head-of-hollow or valley fill.

These different approaches were adopted to allow increased flexibility for the operators and the State regulatory authorities while maintaining the public safety and environmental protection that Congress mandated.

The flatter fill areas are covered by the more general requirements of Section 816.71 since the risk of failure or pollution of ground or surface water may be less than in steeper areas. Both Sections 816.72 valley fills and Section 816.73 head-of-hollow fills are defined in Section 701.5 of the final regulations.

For valley fills, Section 816.72 provides for a fill with a rock underdrain constructed with diversion ditches that carry surface water away from and around the fill. The engineered rock underdrain and diversion ditch system are necessary because valley fills block a path of water flow from a watershed above the valley fill. If the fill is a head-of-hollow fill, then there will be a smaller watershed, in which case Section 816.73 provides that the fill may be constructed with a rock chimney drain and water may be diverted toward the rock chimney. Section 816.74 governs a special type of either head-of-hollow or valley fill that is made up of at least 80 percent by volume of sandstone, limestone, or other durable rocks that do not slake in water. In such fills, internal drainage is more free and failure because of saturation is much less of a risk, and erosion should be minimal. Therefore, special methods of construction are allowed.

Spoil disposal practices in mining operations have had a major impact on the environment and, in some cases, represented a significant hazard to life and property. The requirements outlined in these Sections of the final regulations provide positive measures to protect life, property, and the environment by establishing criteria for the disposal of excess spoil materials while achieving adequate drainage control and long-term stability. For reference to the potential environmental impacts of excess spoil disposal see: "Final Environmental Impact Statement OSM-EIS-1," pp. III-13-15.

If excess materials are improperly placed across drainage channels and provide inadequate drainage and stability, disturbance to the hydrologic balance and impact on safety could be profound. (Comptroller General of the U.S., 1977, pp. 1-2; Coalgate and others, 1973, pp. 93-94; Hopkins and others, 1975, p. 9; Taylor, 1948, pp. 406-407). The purpose of detailed construction standards for disposal of excess spoil is to construct fills which will not require maintenance over the life of the fill. Fills constructed for highways, railroads and buildings are not only carefully engineered, but also monitored and maintained for their lifetime. In contrast, excess spoil fills are ultimately the responsibility of the surface landowner who is likely not to have the capital or equipment for long-term maintenance or remedial action. Therefore, it is essential to design and construct excess spoil fills properly.

Major issues which have been identified based on public comments were separated into five areas:

(1) Semantic interpretations of the terms "haul or convey" versus "transport and placed";

(2) durability requirements for rock used in underdrains;

(3) Lift thicknesses for excess spoil placement;

(4) Allowance of alternative spoil disposal methods; and

(5) Provisions for the disposal of coal processing waste in excess spoil fills.

Each of the principal issues, as well as additional comments, are addressed below.

The authority for these proposed Sections is found in Sections 102, 201, 501, 503, 504, 507, 508, 510, and 515 of the Act. The rationale for selecting the final regulations in lieu of the alternatives analyzed in the Regulatory Analysis is found in the context of this general preamble discussion, the disposition of submitted comments related to the proposed regulations, and the preamble to the proposed regulations for these Sections.

Technical literature used in the preparation of these Sections is listed in the preamble discussion for Section 816.91–816.93 in addition to the following:

Bragg, G. H., Jr., and Ziegler, T. W., 1975. Design and Construction of Compacted Shale Embankments, Volume Two: Evaluation and Remedial Treatment of Shale Embankments. 233 pp. FHWARD-75-62.

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Council on Wage and Price Stability/Regulatory Analysis Review Group. Comments submitted to OSM, dated November 27, 1978, pp. 13-17.

Curtis, W. R. 1971a. Strip-mining, erosion and sedimentation. American Society of Agricultural Engineers Transactions. Vol. 14, no. 3, pp. 434-436.

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Dodson, Gerald F. Memorandum to the Administrative Record, dated November 6, 1978. 2 pp.

Ettinger, Charles. Transcript of testimony given at public hearings held by OSM on October 25, 1978, pp. 7–22.

Franklin, J. A., and Chandra, R. 1972. The slake-durability test. Pergamon Press, International Journal of Rock Mechanics and Mining Sciences. Vol. 9, No. 3, pp. 325–341.

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Green, B. C. Written comments submitted to OSM, dated November 27, 1978, 23 pp. with figures and illustrations.

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Lutton, Richard J. 1977. Design and Construction of Compacted Shale Embankments, Volume Three: Slaking Indices for Design. FHWARD–77–1, 88 pp.

Mason, Brian, 1966. Principles of geochemistry. Third edition. John Wiley and Sons, Inc., New York, 329 pp.

NCA/AMC Joint Committee, Comments received proposing addition of 816.74. Submitted to OSM, November 27, 1978. pps. S–190 through S–194.

Plass, W. T. 1967. Land disturbances from strip mining in eastern Kentucky. U.S. Forest Service Research Notes NE–52 (7 pp.) NE–68 (6 pp.), NE–69 (7 pp.), and NE–71 (7 pp.).

Shamburger, J. H., Patrick, D. M., and Lutton, Richard J. 1975. Design and Construction of Compacted Shale Embankments, Volume One: Survey of Problem Areas in Current Practices, 288 pp. FHWARD–75–61.

Underwood, Lloyd B. 1967s. Classification and identification of shales. Journal of the Soil Mechanics and Foundation Division, ASCE vol. 93, No. SM6, pp. 97–116.

U.S. Congress: H. Rept. 218, 95th Congress, 1st sess. p. 126 (1977).

U.S. Department of Energy, 1978. Comments in a document to OSM, November 24, 1978, Section on Excess Spoil Disposal, pp. 1–15.

U.S. Environmental Protection Agency. 1976b. Erosion and sediment control—Surface mining in the eastern United States; Vol. 1, Planning; Vol. 2, Design. U.S. Environmental Protection Agency Technology Transfer Seminar Publication EPA–625/3–76–006. Vol. 1, 102 pp; Vol. 2, 137 pp. (Available from U.S. Department of Commerce, NTIS PB–261 353).

U.S. Environmental Protection Agency. 1978sb. Pollution control guidelines for coal refuse piles and slurry ponds. (Prepared by W. A. Wahler and Associates, Palo Alto, Calif.). U.S. Environmental Protection Agency Contracts Nos. 68–03–2344 and 68–03–2431 report. 213 pp.

U.S. 95th Congress. 1977a. Surface Mining Control and Reclamation Act of 1977. Pub. L. 95–87. 91 Stat. 445–532.

Weigle. 1966. Spoil bank stability in eastern Kentucky. Mining Congress Journal, April 1966. pp. 67–68 and 73.

Young, Stephen G. "Comments on Substance of CEA's Contacts Relating to OSM's Proposed Nationwide Permanent Program for the Regulation of Surface and Underground Mining," dated January 12, 1979. Letter of 2 pages with attachment 113 pp. and 6 Appendices, dated December 15, 1978.

§ 816.71 Disposal of excess spoil: General requirements.

Section 816.71 requires controlled placement utilizing current engineering practices common in embankment construction for all types of permanent fills. This Section implements the general requirements outlined in the Act and is applicable to all excess spoil disposal areas. For definition of the different types of fill see 30 CFR 701.5.

Disposal of excess spoil in designated offsite storage areas such as pre-existing mined benches is presently practiced in several States. In some areas, disposal of excess spoil has occurred without benefit of permits, sufficient bonding, or minimal provisions for environmental control. Under the proposed permanent regulations, Section 816.71(a), disposal of excess spoil was to be permitted in areas only "other than mine workings or excavations." The Office recognizes the constructive and beneficial results for disposal of excess spoil in such workings or excavations, and strongly encourages this practice which is feasible and consistent with both the Act and the permanent performance standards. As a result, the wording of Section 816.71(a) has been modified to clarify the language.

Commenters said the first cut or box cut spoils should not adhere to the same requirements as excess spoil. The commenters said Section 515(d) of the Act separates the requirements of steep versus flat slope areas regarding spoil disposal. The legislative history and the Act in Section 515(b)(22) do not indicate that excess spoil regulations should be divided based upon mining terrain slopes. Therefore where box cut or first cut spoils are not required to achieve approximate original contour or cannot be handled in accordance with Section 816.101, they should be treated as any excess spoil and comply with the requirements of Sections 816.71–816.74.

Commenters objected to the use of the phrase "haul or convey" since Section 515(b)(22)(A) of the Act uses the language "transported and placed." The legislative history shows that "standards require controlled placement of spoil. Spoil must be transported-hauled by truck or other vehicle-placed and compacted. . . ." (123 Cong. Rec. H–7582, July 21, 1977). The intent of the recommended change was to allow uncontrolled end-dumping soil as an acceptable method of spoil placement. This recommendation is rejected.

One commenter noted that the use of the word "replaced" in Section 816.71(c) regarding topsoil appeared to be an error. He suggested use of the term "placed" as an alternative. This comment was rejected, as "replaced" is consistent with Section 816.22.

A commenter suggested that removal of topsoil, vegetative, and organic material was not necessary "in the nonstructural portion of the fill to insure stability." The Act, however, requires removal of topsoil in Section 515(b)(5); therefore, this comment is considered non-substantive and cannot be accepted.

Some commenters contended that all topsoil should be removed from the entire disposal area before any spoil is placed on it. This is not implied by the regulation. OSM recognizes that the entire removal of topsoil before spoil is placed in the area is undesirable. Concurrent removal of topsoil is accepted and desirable and minimizes the disturbances at the disposal site.

A commenter suggested that moderate slopes are not always stable because the parent bedrock which produces moderate slopes usually results in deeply weathered soils. He suggested that foundation investigations be required prior to fill placement. This comment was rejected, as placing this requirement in Section 816.71(e) would be redundant because Section 816.71(n) requires foundation investigations.

Commenters proposed a variance allowing small depressions or impoundments on the crest of fills, if demonstrated to be consistent with the post-mining land use and stability of the fill. Commenters said that such impoundments would enhance postmining land uses, such as grazing. It is a commonly accepted engineering and construction practice to minimize infiltration of surface water into the fill

mass so as to maintain the lowest possible hydrostatic pressure within the fill. (Hopkins and others, 1975; Cedergren, 1967; Chassie and Goughnour, 1976; U.S. Army Corps of Engineers, 1952). The existence of depressions or impoundments, regardless of size, can increase the phreatic surface within the fill. Therefore the prohibition of impoundments on fills is retained in Section 816.71(g) in the final regulations.

Commenters argued that the prohibition of terraces in the proposed final regulations was inconsistent with the definition of approximate original contour in Section 701(2) of the Act. It is agreed that terraces, if properly constructed, are desirable to break long slopes, control erosion and enhance stability. Therefore, the requirements of Section 816.71(h) have been altered to allow terraces in accordance with Section 816.102(b) and if approved by the regulatory authority. (Curtis, 1971b, pp. 198–199; Curtis and Superfesky, 1978, p. 156; Paker, 1965, Figure 1; Skelly and Loy, and others, 1978, pp. 148–149).

Commenters raised objections to the specification in Section 816.71(i) that the toe of the fills rest on a 20 degree or flatter slope. Since the consideration of the slope of natural ground at the toe of the fills is an integral part of stability analyses, this requirement was deleted in the final version of the regulations. (Huang, 1978, pp. 11-12; Lambe, 1969, pp. 366-367.)

Commenters said rock buttresses and keyway cuts are not always necessary (*e.g.*, if the design achieves a 1.5 factor of safety). The use of keyway cuts and buttresses is intended to increase the stability of embankments where steep foundation conditions necessitate special treatment to resist the sliding movement created by the weight of the fill. (Chironis, 1977, p. 107; Huang, 1978, pp. 5, 11-12; Lambe, 1969, pp. 366-367; Loy and others, 1978, p. 9; Comptroller General of the U.S., 1977, pp. 1-2; Chassie and Goughnour, 1976, p. 66). The Act in Section 515(b)(22)(F) requires a rock toe buttress, of sufficient size to prevent mass movement. Therefore, Section 816.71(i) has been modified to reflect the change supported by commenters and to clarify the relation of this Section to the Act.

Commenters asserted that persons under the supervision of registered professional engineers should be allowed to conduct the inspections required in Section 816.71(j). The language of Subsection (j) states "registered professional engineer or qualified professional specialist." This should not preclude persons under the supervision of a registered professional engineer from making the inspection provided that they are indeed qualified. The requirement for inspection, certification, and record-keeping is consistent with 30 CFR 77.216-3, and the WV Code, Chapter 20, Article 5-D-9, and in keeping with construction standards for quality assurance.

At the request of one commenter, "critical construction periods" have been clarified in Section 816.71(j). The commenter stated that without this clarification operators would be subject to an indeterminate number of inspections, which would increase cost. While most design and construction engineers should be able to provide guidance on critical construction periods, a list, which should not be considered all inclusive, has been provided in Section 816.71(j).

Commenters suggest that inspection frequency be increased due to variations in embankment construction schedules. The quarterly inspection requirement is maintained as a minimum; however, the regulatory authority may increase the inspection frequency, if fill construction is so rapid that quarterly inspection will not be adequate to monitor construction practices effectively.

Commenters said coal processing waste should be allowed to be placed in head-of-hollow or valley fills. Some commenters asserted that the Office had no legal authority to exclude such waste under these Sections. Others asserted that since the Office allows the use of waste in dams and embankments, OSM should allow its use in head-of-hollow or valley excess spoil fills. They argued that the physical, chemical, and engineering qualities of such waste can be determined and its use adequately controlled so as to assure stability and environmental protection.

The Office accepted portions of these comments. The Office rejects the argument that the exclusion of coal processing waste is beyond its legal authority. The requirements of Section 515(b)(22) of the Act are extensive and express a clear congressional concern to assure the long-term stability of large fills, especially in the steeper areas, such as the Appalachia coal fields. (H. Rept. No. 95-218, 95th Cong., 1st Sess., 114, 1977.) The period of time over which many fills are built and the increasing use of fills in current mining make it difficult for a regulatory authority to monitor construction. This difficulty coupled with serious concern about long-term stability and potential for ground and surface water pollution require thorough control.

Because the risks associated with excess spoil fills are less in flatter areas, the disposal of waste was allowed in spoil disposal areas which do not fall within the definition of head-of-hollow or valley fills. However, waste is still excluded from fills that fall within those definitions. This distinction was made because valley and head-of-hollow fills are in steeper areas where side slopes in excess of 20 degrees and average profiles in excess of 10 degrees are encountered. Fills in such steeper areas are more prone to failure, and the effects of failure more damaging.

Coal waste frequently has properties that contribute to instability, especially wet fine coal wastes (Coalgate and others, 1973, p. 6; Comptroller General of the U.S., 1977, pp. 1-2; Preamble, Section 816.81). Moreover, depending on the characteristics of the coal seams being cleaned or processed, coal waste often has acid- or toxic-forming potential (Coalgate and others, 1973, pp. 14-18). The stability and toxic-forming characteristics of a given sample of coal waste can be determined by analysis. Depending on the analysis, the use of a given material may be authorized in a general manner, but more frequently a given coal waste will require special handling, such as mixing in a ratio or in a place with spoil being used in the fill. In the latter case, stability or freedom from toxic drainage is only assured when the waste is handled as prescribed. Moreover, the characteristics of the waste often change due to breakdowns or changes in the seam or seams of coal being processed.

Because of all these variables, regulatory control of fills including coal waste is much harder to achieve. The Office, therefore, decided to exclude coal waste from fills in steep areas. For fills in flatter areas, which generally pose less stability and toxic-formation problems, the Office allows the operator the flexibility of including coal waste, provided it is handled to minimize the problems that may be associated with its use.

In response to commenters' assertion that since coal waste is allowed in dams, it should be allowed in fills, it is noted that coal waste is allowed in dams under careful control, because dams are more highly engineered in general, typically built with greater quality control and are constructed over a shorter time. All these factors make regulatory control and environmental safeguards easier to achieve. Waste disposal areas designed and constructed specifically to handle coal processing waste, as specified in the regulations, therefore, are justified.

§ 816.71 Disposal of excess spoil: Valley fills.

This Section establishes the requirements for valley fills. This type of fill is characterized by a structure located in a valley where the fill material has been hauled and compacted into place, with diversion of upstream drainage

around the fill. For definition of "valley fill", see 30 CFR 701.5.

Some commenters asserted that the 1.5 static, long-term factor of safety requirement for fills was too stringent, while others supported it as necessary to provide adequate safeguards. Reduced factors of safety were considered as alternatives for all fills and also for remotely located fills.

The 1.5 factor of safety is standard engineering practice for earth and rockfill structures located where failure could cause loss of life or property damage (Canada Department of Energy, Mines and Resources, 1977, p. 80; Canada Department of Energy, Mines and Resources, 1972, pps. 5–27; MESA, 1975, p. 5.143; MESA, 1976b, p. 3; Lambe & Whitman, 1969, p. 373). MESA (1975, p. 5.143) and Canada Department of Energy, Mines and Resources, (1972, p. 5–27) recommend the use of reduced factors of safety when the potential of property damage and loss of life does not exist. Meyerhoff, 1970 (pps. 349–355) discusses the correlation of probability of failure with variability in strength parameters, foundation conditions, piezometric surface, and other assumptions utilized in the computations of safety factors. He recommends the standard for safety factors should be increased to 1.7 to account for these relationships, thus further reducing probability of failures. Bishop (1955, p. 7) states that even with high factors of safety, overstress can occur below a 1.8 factor of safety.

While most discussions of fills focus on the protection of life and property, the Act has also mandated the protection of the environment. The Office believes that the added degree of protection provided by increased factor of safety requirements even in remote areas, is warranted, and well justified due to the necessity for: (a) protection of the environment from excessive erosion, contribution of pollutants, and other adverse long-lasting effects of fill failures; (b) protection of existing life and property; (c) protection of life and property which may develop below originally remote areas; and (d) safeguards which must offset the lack of long-term maintenance over the life time of the fill.

Commenters objected to Section 816.72(b)(2), which requires subdrains to be protected by filter systems. Filters are state-of-the-art requirements to control migration of fines from the foundation or fill material into drains. In fills where drains become nonfunctional due to the migration of fines and subsequent blockage, failure is common. The control of seepage is one of the most critical areas of structural design. (ASCE, 1966, p. 550; Canada Department of Energy, Mines and Resources, 1977, pp. 5–18 to 5–56; Canada Department of Energy, Mines and Resources, 1972, pp. 5–9; Sherard and others, 1963, pp. 81–91; Terzaghi and Peck, 1967a, p. 57; Cedegren, 1967, p. 175; U.S. Army Corps of Engineers, 1952, pp. 10 and 16; U.S. Bureau of Reclamation, 1973, pp. 306–307; West Virginia Department of Natural Resources, 1975, p. 1; MESA, 1976b, p. 3; MESA, 1975, pp. 5.24–5.25 and 8.95–8.102); Comptroller General of the United States, 1977, p. 2; Coalgate and others, 1973, p. 95.) Therefore, OSM has not removed the filter requirement.

Comments were received regarding the minimum size requirements for underdrains and the gradation restrictions for the rock comprising the underdrains. None of the comments provided alternative drain sizes, but instead insisted upon the deletion of the table in Section 816.72(b)(3) and stressed reliance on site-specific engineering design. Another suggestion was to leave the table and allow the operator an option of submitting a site-specific design, including adequate drainage control.

The rock drain criteria in Subsection 816.71(b)(3) represent recommendations of current studies concerning valley fill design and construction. (West Virginia Department of Natural Resources, 1975, p. 56; Loy and others, 1978, pp. 6–8; Chironis, 1977, pp. 104–110.) The criteria attempt to strike a balance between site-specific drain design (based on in-depth determinations regarding anticipated flow rates, permeabilities, gradations and local geologic, topographic and hydrologic conditions) and the simplicity of standardized design. The methods used to obtain and place the materials are left to the permittee, and the sizes of the materials are not particularly large considering the amount of material involved. As a result, the requirements of Section 816.72(b)(3) remain unchanged.

The Office is aware of the problems with ensuring that rock size meets the requirements of Section 816.72(b)(3). In certain instances, the operator will have to provide multi-staged filter systems in order that the drain, filter, and fill achieve acceptable transitions.

In the table of Section 816.72(b)(3), commenters noted omission of a value specifying the height of drains in fills exceeding one million cubic yards in volume. This was a typographical error and should read "16 feet" in the final version (Chironis, 1977, p. 108).

Commenters questioned the durability standards set forth in the proposed regulations. Commenters noted the requirements differed from the material control specifications from which they were derived. While there existed a lack of clarity in the proposed Section 816.72(b)(5), the intention of the regulation was to insure that subdrain material be sufficiently durable to prevent degradation which could result in blockage of the drain and subsequent failure of the fill (Terzaghi and Peck, 1967a, p. 57; Cedergren, 1967, p. 175; U.S. Bureau of Reclamation, 1973, pp. 306–307; Loy and others, 1978, pp. 6–8; U.S. Army Corps of Engineers, 1952, p. 16). The regulations have been modified to correspond to the supporting technical specifications.

Since the availability of underdrain material capable of meeting these standards could be cost restrictive in some areas of the country the final regulations have been modified to allow underdrains which consist of non-degradable, non-acid or toxic-forming rock, which will not slake in water. This provides greater flexibility in that more frequent use of site available rock will be permitted.

The following list of references are provided as acceptable, but not exhaustive guidelines for determining the slake index of rock:

(a) DiMillio, Albert F., "Status of Shale Embankment Research", Public Roads, Vol. 41, No. 4, March 1978, pp. 153 to 161.

(b) Franklin, J. A., and Chandra, R., "The Slake-Durability Test", Pergamon Press, International Journal of Rock Mechanics and Mining Sciences, Vol. 9, No. 3, 1972, pp. 325 to 341.

(c) Heley, W., and MacIver, B. N., 1971, Development of Classification Index for Clay Shales, TRS–71–G, pp. 95. Report 1 Waterways Experiment Station, U.S. Army Corps of Engineers.

(d) Lutton, Richard J., 1977. Design and Construction of Compacted Shale Embankments, Vol. 3: (Slaking Indices for Design. FHWARD–77–1, 88 pp.).

(e) Underwood, Lloyd B., "Classification and Identification of Shales," ASCE Journal of Soil Mechanics and Foundations Division, Vol. 93, No. SM6, November 1967, pp. 97 to 116.

(f) Wood, L. E., and others, 1976 "Guidelines for Compacted Shale Embankments, VII Ohio River Valley Soils Seminar", pages 1 to 5, 1 table and 8 figures.

Commenters questioned the requirement in Section 816.72(c)(1) that eighteen-inch lifts be used in the construction of excess spoils embankments. Requirements for lift thickness in earth fill construction vary with the method of placement and the type of embankment, construction equipment used and gradation of the fill material. The boundary conditions, such as phreatic surfaces within the fill and adjacent areas, may vary from site to site and must be determined from on-site investigation or can be taken into account by conservative assumptions. The eighteen-inch lift thickness proposed in the regulations is based on litera-

ture which is applied to dams, groins, and highway embankments as well as spoil fills (43 FR 41761). After further examination of the problem and of the comments received, the Office has determined that larger lift thicknesses are consistent with stable fills in some areas (Chironis, 1977, p. 106; Greene and Raney, 1974, p. 8; U.S. Army Corps of Engineers, 1971, pp. K 10-39, M-15; U.S. Navy Bureau of Yards and Docks, 1971, table 9-3; Grim and Hill, 1974, p. 61). Accordingly, Section 816.72(c) has been modified to allow lifts no greater than four feet in thickness, or less, to achieve densities necessary to ensure mass stability, prevent mass movement, avoid contamination of fill drainage systems, or the creation of voids. The regulatory authority has the discretion to require thinner lifts, if the gradation of the material warrants thinner lifts.

Commenters questioned the requirements in Section 816.72(d) relative to stabilized diversions off the fill and the necessity for sediment control at the exit of diversions. Commenters said that stabilized channels "off the fill" created an unnecessary disturbance and that channels on the fill could protect that portion of the fill from erosion. Diversion of water away from the fill surface is considered sound engineering practice (Canada Department of Energy, Mines and Resources, 1977, pp. 58-59, 95-96; U.S. Environmental Protection Agency 1976b, pp. 32-33, 78; WVDNR, 1975, p. 2; EPA, 1976, Canada Department of Energy, Mines and Resources, 1972, p. 2-2; Coalgate and others, 1973, pp. 93-94; Calhoun, 1968, p. 79; Casagrande, 1978, pp. 3 of attachment; Loy and others, 1978, pp. 79 and 82; MESA, 1976b, p. 1; Comptroller General of the U.S., 1977, pp. 1-2). The material making up the fill structure is generally less resistant than the surrounding bedrock, thus, more stringent design criteria are necessary to protect against erosion of the diversion in the weaker material. The Office realizes that construction of diversions off the fill structure will affect more area than if the diversions were on the fill surface. However, based upon sound engineering practice, OSM believes that less environmental harm will result from retaining the requirement to build diversions off the fill structures. Consequently, the language of the regulations remains unchanged.

The use of the 100 year storm and 24-hour duration storm is discussed in the preamble for Sections 816.43 and 816.73(c) which is incorporated herein by reference.

Commenters said that sediment control should not be required at the discharge of the diversion carrying runoff from the drainage area above the fill. They assumed that this area was undisturbed. One commenter recommended sediment control be required only at those diversions carrying runoff from the fill surface. The proposed language has not been changed. Sediment load must be controlled from the fill area, from the diversion structure, or from mining activities existing above the fill. See Section 515(b)(10) of the Act.

§ 816.73 Disposal of excess spoil: Head-of-hollow fills.

Section 816.73 contains requirements for construction of head-of-hollow fills. These fills may be constructed with rock-core chimney drains or diversions, as for valley fills. The rock-core chimney drain system is designed to direct water falling of the surface of the fill to a central rock-core by means of surface grading. The rock-core extends from the tow to the head of the fill and from the base to the surface of the fill. A system of lateral underdrains will dispose of water from seeps emerging beneath the fill. Filters are provided for the core and subdrains. This fill construction method is relatively new, but as commenters point out, has been used with success in West Virginia for the past several years (Green, 1978, p. 21).

Allowing rock-core chimney drains was based on the following course of events. On December 13, 1977, final rules were adopted for the interim regulatory program which covered the disposal of spoil from surface mining in areas other than mine workings or excavations, and authorized only the rock underdrain system of fill construction. Following adoption of the rules, the Office received petitions for change of the rules affecting head-of-hollow fills. The investigation of the petitions, as reflected in this preamble, has resulted in revisions to the rules.

The State of West Virginia and coal mine operators said that the Office was being too narrow in defining only one construction method for building head-of-hollow fills. They claimed that the "rock-core system," authorized in West Virginia, provided as much or more protection as the "rock-underdrain system" in the interim program.

Fills built with the rock-core method are stable at present. However, the development of steady-state seepage through fill masses can take many years, and the results of such seepage may not be obvious for some time to come. The following discussion describes some of the problem areas with head-of-hollow fills.

On the one hand, several professional engineers stated that long-term clogging of the rock core by fine-grained sediment in the drainage and in some cases piping (internal erosion) caused by the flow of water within the fill could lead to instability and potential failure of the fill (Loy and others, 1978, p. 106; Robins and others, 1977, pp. 1-4; Report of Committee on Interior and Insular Affairs H.R. 95-218, April 1977, pp. 121-123). One commenter said the rock-core method should be prohibited because rock drains should only be used for passage of seepage or groundwater flows, not surface flow. The Office appreciates the possibility of siltation and blockage of the drain. As significant amounts of water are introduced into this system, there is an increased potential for blockage of the drain. A deposit of fines within the upper portion of the rock core can occur, since the core will act as an energy dissipater when flows from above the structure lose energy upon reaching the core. The hydraulic gradient increases as the water flows by gravity downward through the core. Thus, material surrounding the core becomes susceptable to piping, bringing more fines into the system.

On the other hand, the major advantage of the rock core construction appears to be its ability to cope with long-term differential settlement of the fill that results in a surface grade toward the center of the fill, where settlement is usually greatest. In areas where settlement may reverse the slope of the crest of the fill (e.g., with water flowing away from the core), the designer may require additional camber.

In an effort to combat some of the problems identified with the rock-core method of excess spoil disposal, two requirements are added to decrease the potential for blockage of the core.

First, the rock-core system must be surrounded by a properly designed filter. This will reduce piping potential from groundwater in the fill mass, and from flows through the core (*see*, preamble Section 816.71(1)). The construction control measures necessary to prevent contamination of the filters as the size of the collection area increases will prove difficult because the surface of the fill slopes toward the core, and surface runoff will carry large amounts of sediment onto the fill.

Second, these structures must be located in the upper reaches of valleys or hollows and be designed to fill the disposal site to the approximate elevation of the nearby ridgeline (Greene & Raney, 1974, p. 7). The requirements are premised on widely accepted concepts. For a discussion of the necessity of filters, see the preceding preamble of Section 816.72(b).

The need for minimizing or controlling the surface runoff above a site has been the basis of state-of-the-art diversion design. This concept applies

to the head-of-hollow fill system. The combination of controlling surface and ground water flows will result in environmentally sound stable fills. This is accomplished by maintaining low phreatic surfaces and reduction of acid formation and erosion. (GAO, 1977, pp. 1, 48, 93–95; Chassie and Goughnour, 1976, pp. 65–66; Canada Department of Energy, Mines and Minerals, 1972, p. 2–2; Hopkins and others, 1975, p. 9; EPA, 1976b, pp. 32–33; Wahler, 1978, pp. 69–70, 78; National Coal Board, 1970, pp. 8, 56; Taylor, 1948, pp. 406–407; U.S. Department of the Navy, 1974, pp. 7-7-1; Loy and others, 1978, p. 82).

To date, the Office is not convinced that rock core fills are potentially less stable than the rock underdrain fills. Some engineers have expressed doubt that the rigorous West Virginia construction requirements could be adequately monitored in a State that was just beginning a strict inspection program and that inadequate engineering practices would be more likely to result in failure of the rock core system. The Office emphasizes that it is critical that the rock core maintain its permeability throughout. If one impermeable section of the core is constructed or if a section subsequently becomes impermeable, failure could result.

In summary, the rock-core method has been the subject of debate, but it reflects currently acceptable technology based upon the performance record of 250 fills (Green, 1978, p. 2). On the basis of the investigation, the Office is providing a permanent program revision to the regulations permitting the rock core system of head-of-hollow fills to be used at the discretion of the regulatory authority with adequate inspection and supervision. At the same time, the Office is instituting a formal study to investigate various types of fills.

The Office also has determined to permit the use of the rock-core system of disposal where the final crest of the fill is at or near the elevation of the coal seam. These type fills will be limited to disposal volumes of 250,000 cubic yards or less. (Heine, 1978, p. 1). The Office believes these fills are relatively small and that any increases in the risk of failure because of the use of the rock core drain is offset by their small size. However, these fills should also be located to minimize the upstream drainage area into the fill.

Section 816.73(b) contains criteria for the rock chimney drain, including size, filters, drainage sump, terrace and grading requirements (West Virginia Department of Natural Resources, 1975, p. 76; Hinger, 1978, pp. 7–22). In response to reports on potential clogging of the rock core, *see* General preamble discussion for Section 816.73. Commenters said that clogging of the rock core will not be a problem because of revegetation requirements reducing sediment yield. This is only true after construction when the disturbed areas have been reclaimed successfully and erosion and sediment load entering the fill have been eliminated. During construction, the area above the fill is generally disturbed by haulroads and mining and reclamation operations which contribute sediment capable of plugging the core. The crest of the fill itself cannot be reclaimed, as is the outslope, therefore, sediment from the crest is also directed into the core.

Commenters were concerned about the expense and availability of enough rock to construct underdrains. Since no details were presented regarding cost, current practices or engineering which would substantiate this claim, and since, as discussed previously, the record contains numerous examples of fills constructed on all types of terrain, this comment was rejected. Moreover, the requirement for a rock underdrain is a critical element for safe fills. (*See*, preamble for Section 816.72(b).)

Section 816.73(c) specifies the hydrologic design capabilities of the drainage control system. The 100-year frequency storm is a standard criterion for control of runoff above nonimpounding structures (West Virginia Department of Natural Resources, 1975, p. 2; MESA, 1976b, p. 1). The 24-hour duration storm was chosen over the 6-hour storm, because it generally results in a runoff volume and peak somewhat higher than that of the 6-hour in the same area (Chow, 1964, pp. 9–50 through 9–65; U.S. Department of Agriculture, Soil Conservation Service, 1972, Chapter 21; U.S. Weather Bureau, 1961, pp. 56–58).

A commenter requested clarification of the applicability of the final regulations to partially constructed hollow fills. Clarification is provided under the definition of "existing structures" in Section 701.5 and the preamble to Section 701.11(e).

§ 816.74 Disposal of excess spoil: Durable rock fills.

This Section provides an alternative method for disposal of excess spoil, as a result of numerous comments requesting allowances for practices which satisfy site-specific necessity. This Section is applicable in instances where durable rock can be demonstrated to exceed 80% of the volume of excess spoil and represents an addition to the proposed regulations.

Many commenters support the adoption of site specific standards for durable rock fills. The Section has been adopted solely for durable rock fills. Many fill structures have been dumped in place (Davis and Sorenson, 1969, p. 18; U.S. Bureau of Reclamation, 1973, p. 60; Terzaghi and Peck, 1967a, pp. 599, 604; Huang, 1978, p. 5; Robins and others, 1977). As the state-of-the-art progressed, it became obvious to designers that this was a highly cost-effective method of construction (U.S. Department of Energy, 1978, p. 4; Young, 1978, pp. 79–94; Goad and Leer, 1978, pp. 1–10 with Exhibits; Council on Wage and Price Stability/Regulatory Analysis Review Group, 1978, pp. 13–17; Loy and others, 1978, pp. 107–176). Little compactive effort or minimal hauling and handling is required, as the material consolidates under its own weight. In dams, where this method was widely utilized, the sole problem resulted from differential settlements of the structure, which created cracked, impermeable zones and other similar problems, which could lead to instability.

Other problems, such as infinite slope failures, resulted from the existence of outslopes at the angle of repose. These types of failures are generally shallow, but can become retrogressive (Canada Department of Energy, Mines and Resources, 1972, p. 2–3). In addition, if less durable or more impermeable zones were dumped, which created weak layers parallel to the outslope of the fill, failures could occur. (Canada Department of Energy, Mines and Resources, 1972, pp. 88–89; Taylor, 1948, p. 476; Loy and others, 1978, pp. 88–89).

Section 816.74 of the final regulations is based upon the premise that the solution to safe end-dumped fills is rock durability.

The existence of dumped rock fills was carefully considered. A number of the dumped rock embankments considered were made up of extremely durable igneous rock such a hornblende, granodorite, granite and quartz monzonite. These rocks are crystalline in structure and are thus generally more durable than sedimentary rocks. Even though the consideration of end-dumping this type of rock does not directly transfer to regions with sedimentary rock, it does show that rock must be durable when end-dumped.

The variability of excess spoil material supports the use of site specific design requirements. The Office has tried to strike a balance between objective standards and a multitude of possible alternative methods which address special situations, while still satisfying the objective standards required by law.

The concept presented by this Section has been supported by progressive generations of engineering design and appears to promote more cost effective spoil disposal. The following discussion details the requirements of the Section:

(1) The introductory paragraph of Section 816.74 allows 80 percent durable rock to be placed in a single lift, if site-specific conditions and justification by experienced engineers warrant. Durable rock is determined by the slake durability index, as identified in the preamble to Section 816.72(b)(5). This introductory paragraph incorporates the requirements of Section 816.71 by reference.

(2) Section 816.74(a) provides for the stable configuration of the fill by requiring controlled placement and the consideration and proper handling of less durable materials. This is consistent with the Act, Section 816.71(f), and standard engineering practice (Canada Department of Energy, Mines and Resources, 1972, pp. 2-3 and 2-9).

(3) Section 816.74(b) specifies stability analyses of the structure to show the long-term, static and dynamic factors of safety achieve 1.5 and 1.1, respectively. These requirements reflect the intent of the Act and provide accepted standards for stability, as discussed in the preamble to Section 816.72(a).

(4) Section 816.74(c) states criteria for achieving proper subsurface drainage control, which are consistent with Sections 816.71(a)(1) and 816.72(b). (*See*, preambles for Sections 816.71 (a)(1) and 816.72(b).)

(5) Sections 816.74 (b), (e), (f), and (g) provide specific requirements for control of surface drainage, grading and terracing. The requirements parallel the comparable subsections of Sections 816.72 and 816.73.

The provisions of Section 816.74 reflect options developed after deliberation of the following items.

Literature used in consideration of alternatives for the regulations show that the earth's crust is made up of approximately 35 percent clay-bearing rock (Franklin and Chandra, 1972, p. 325). This would include igneous, metamorphic, and sedimentary rocks. Sedimentary rocks are estimated to comprise as much as 82 percent shale, 12 percent sandstone and 6 percent limestone. Mason (1966, p. 153), Drnevich and others, (1976, pp. 50-51), Weigle (1966, p. 67), Huang (1978, p. 30), and Cumming and others (1965, p. 10) have shown that surface mine spoils are composed of relatively high concentrations of clay and silt-sized particles. Some commenters have criticized the Office for applying criteria which address earthfill structures, when most mines are dealing with rockfill. While OSM realizes that overburden materials are of variable grain size, plasticity and permeability, the Office is of the opinion that the excess spoil problem involves both earth fill and rockfill.

As literature has shown, overburden materials may contain silt and sand-size particles. The ability of these materials to withstand weathering and deterioration is dependent upon the type of sediment which occurs as a initial deposit before consolidation and upon the type of cementing material which consolidates the sediment into rock (Mason, 1966, pp. 153-156). Drnevich and others (1976, p. 58) and the U.S. Department of the Navy (1974, p. 7-7-14) have shown that surface mine spoils or soils with silt size particles lose shear strength with time due to exposure to water and weathering. Shales have historically caused many geotechnical problems from improper treatment and required elaborate remedial design (Chassie and Goughnour, 1976, pp. 65-66; Shamburger, and others, 1975, pp. 1-8; Bragg and others, 1975, pp. 1-5; and DiMillio, 1978, p. 153). These types of materials require special consideration and cannot be indiscriminately disposed of. Past excess spoil disposal practices, both in drainways and over mine bench outslopes have resulted in numerous safety and environmental problems where spoil was placed by gravity methods. (Appalachian Regional Commission and the Department for Natural Resources and Environmental Protection 1974, pp. 5-7; Weigle, 1966, p. 67; Robins and others, 1977, pp. 1-3; Loy and others, 1978, pp. 69-74; and Plass, 1967, p. 1).

Comments, which were pertiment to the inclusion of this Section in the regulation, questioned the specificity of excess spoil disposal requirements. The majority of the comments discussed the lack of flexibility in the proposed regulations for designs of a site-specific or innovative nature. Other comments agreed with the former group, with the exception that they also proposed specific criteria for adoption. Essentially these criteria from the latter group of commenters have been adopted as shown in the context of the final regulations. (U.S. Department of Energy, 1978, pp. 1-15; Casagrande, 1978, Attachment, pp. 1-4; NCA/AMC, 1978, pp. S-190 through S-194; Young, 1978, pp. 15-17; and Ettinger, 1978, pp. 7-22).

OSM believes that the adopted regulatory scheme provides for a site-specific design for each valley, head-of-hollow, or other excess spoil disposal area. The final regulations ensure flexibility in that:

(a) The proposed criteria in the regulations have been retained to allow a type of design which is similar to a handbook approach.

(b) The criteria have been amended in final form to allow the construction of durable rock fills.

(c) Overview evaluations of different fill construction techniques will be performed through further research by OSM.

(d) The Office also believes that the opportunity for innovative, flexible design in mining and reclamation practices is permitted by Section 785.13.

While the Office has allowed the use of end-dump durable rock fills, it recognizes several areas which may need consideration during design. The end-dump method inherently produces large quantities of sediment due to the active free face. The free face is unreclaimed until completion and thus may require large or frequently cleaned sediment control structures. The sediment control should be close enough to the structure to serve its purpose, but not so close as to be subject to the consequences of shallow or deep movement at the free face.

The proper handling of less durable materials may become a quality contol problem. It is essential that weak zones are placed in a way to contribute to stability. Mining operations with variable duration of exposure of excess spoil could conceivably require two or more types of disposal areas.

§ 816.79 Protection of underground mining.

Section 816.79 is intended to protect the health and safety of miners working in surface and underground mines adjacent to each other, and to assure that economically feasible underground mining is not foreclosed by nearby surface mining activities, causing both a loss of resource recovery and environmental degradation. Authority for this Section is found in Sections 102, 201, 501, 503, 504, 515, and 516 of the Act.

As specified in Section 515(b)(12) of the Act, Section 816.79 requires a 500-foot separation in all directions between surface mining activity and underground mine workings. Variances from this distance are left to the joint approval of the regulatory authority, the Mine Safety and Health Administration (MSHA) and any appropriate State safety agency.

One suggested alternative considered by OSM was to specify unique situations where the proximity limitations would be waived, such as recovery of partially mined coal deposits in danger of wastage through mine fires, an abandoned underground coal mine which is to be surface mined, or mines that have been operated as a source of non-commercial coal. The Office believes that each case would be different enough to thwart the utility of an extended list of special cases; thus this alternative was rejected.

A second alternative considered was the complete reliance upon MSHA regulations for mines within the 500-foot limit. This alternative was rejected as contrary to the Act and because OSM believes that a joint decision on close proximity of surface and under-

ground mining is warranted due to the different mandates of OSM and MSHA.

Several commenters on the proposed regulations pointed out that the direction of measurement of the 500-foot separation was not specified. After consideration of the alternatives of specifying only horizontal or only vertical separation, OSM has specified that measurement shall be a 500-foot spherical radius; that is, 500 feet separation in all directions between surface and underground operations. This is what was intended in the proposed version of this rule, and implements Section 515(b)(12) in accordance with its plain meaning.

OSM considered exclusion of abandoned underground or surface workings from the 500-foot measurement, but this was rejected because the Act specifically includes "abandoned" workings and because abandoned workings can cause as great or worse hazard to miners and the environment as active workings in the concentration of stresses, methane or other toxic gases, or ground water. Again, it is left to the discretion of MSHA and the regulatory authority to determine whether the 500-foot limit may be waived in the interests of health, safety or economics.

Several commenters felt that this Section should not apply to mining within 500 feet of a domestic production mine of the type excluded from the performance standards under the authority of Section 528(1) of the Act or within 500 feet on mines which affect less than two acres, which are excluded from the performance standard under Section 528(2) of the Act. OSM believes, however, that Congress excluded these mines from the performance standards because it felt the cost to them of compliance, and the cost to the government of regulating them, was unwarranted given the relatively small amount of pollution they generate. However, miners working such mines are entitled to protection from harm from operators subject to the performance standards. In addition, workers in surface mines are entitled to protection from collapse of these small underground workings. Accordingly, the regulations apply to mining within 500 feet of any underground workings.

OSM considered changing the regulations to recognize that an operator could unknowingly violate the 500-foot restriction. The Act, however, does not require such knowledge, and OSM feels that to require knowledge before a violation is deemed to occur would create insuperable problems in enforcement of the Act, and be contrary to the concepts of strict liability which are essential when safety issues are involved.

A suggestion that a specific State agency should be designated to work with MSHA on joint approval of variances was rejected by OSM. The Office feels that agency designations vary too widely from State to State, and that OSM should not dictate its will in this matter.

§§ 816.81–816.88 Coal processing waste.

(1) Authority for these sections is found in Sections 102, 201, 501, 503, 504, 507, 508, 510, 515 and 517 of the Act.

(2) Technical literature utilized in the preparation of these sections is contained in the list of reference in the preamble to Sections 816.91–816.93.

(3) The bases and purposes of Sections 816.81–816.88 are discussed generally in 43 FEDERAL REGISTER pp. 41762–41766. Although some modifications have been made to the proposed regulations for clarity and in response to public comments, the basic premises remain valid.

(4) The quantities of raw coal which require cleaning or processing prior to marketing the product have been on the increase for many years. The major influences affecting this situation can be attributed to: increased coal production, requirements for cleaner burning fuel, coal mine mechanization and extraction of "dirtier" coal deposits (McNay, 1971, p. 3). The resultant coal processing waste must be handled and disposed of in a manner which will not pose a threat to health and safety of the general public or adversely impact the surrounding environment. Most recently, coal processing waste structural failures underscore the need for the regulation of the location. Construction and reclamation of coal waste banks (West Virginia Governor's Ad Hoc Commission of Inquiry, 1972, pp. 6–13 and 7–17).

(5) The potential for damage to the environment from improperly constructed coal processing waste banks is included in the discussion of effects of mining on the natural environment; pp. BIII, 1–77; and on the human environment under safety; p/ BIII, 108; of the final environmental impact statement for the OSM permanent regulatory program. These regulations complement the Mine Safety and Health Administration (MSHA) regulations on coal processing waste disposal under 30 CFR 77.214–77.215 and incorporate standard engineering practices.

§ 816.81 Coal processing waste banks: General requirements.

(1) Section 816.81(a) outlines the requirements that must be met in order to dispose of coal processing wastes that are generated on the site and deposited in disposal areas within the permit area. Controlled placement requirements reflect current prudent engineering practices utilized in embankment construction for all types of permanent fills (Terzaghi and Peck, 1967 a, pp. 440–451; see also ASCE, 1977; USMESA, 1975; USNAVY, 1971) U.S. Comptroller General, 1977, pp. 1-2; Coalgate, *et al*, 1973 p. 6, 41; EPA, 1978, p. 73–77).

(2) Section 816.81(b) outlines the requirements that must be met in order to dispose of coal processing waste materials that are generated outside a permit area and deposited in disposal areas within the permit area. The regulations allow for the disposal of coal processing waste coming from operations outside the permit area because this practice, currently utilized in industry, minimizes the number of disposal areas and consequent disturbances.

(3) Commenters stated that requiring coal processing waste material to be hauled or conveyed to a fill area and placed in a controlled manner was inconsistent with Section 515(b)(22)(a) of the Act. The commenters argued that the regulations should be broadened to allow greater flexibility in the techniques for hauling and disposing of coal waste. Many asserted that end-dumping of coal waste should be permitted. OSM was not convinced by the comments that the regulations should be broadened. Coal waste disposal practices have historically drawn attention because of disasterous slides such as the Aberfan slide in Wales and numerous slides which have occurred through the Appalachian coal region for years (McNay, 1971, pp. 12 and 13). Many of these slides occurred in waste piles which had been end-dumped from a hilltop or mountainside and consequently the internal frictional forces were violated and a slide occurred. Water brought into contact with burning coal causes violent explosions (Andreuzzi, 1970, p. 19). Similar explosions have occurred when natural surface water came into contact with burning refuse material ultimately resulting in bank failures (McNay, 1971, p. 14).

End-dumping of coal waste into disposal areas is not an acceptable method of placement because the material will remain at the natural angle of repose until water contact with the coal waste or continued loading of the fill causes a failure. End-dumping does not reduce the air voids within the fill and thus will contribute to the possibility of spontaneous combustions. Coal waste must be placed in horizontal layers and compacted to assure stability and reduce the possibility of burning. (U.S. Comptroller General, 1977, p. 1-2; Coalgate, *et al*, 1973, p. 1, 29; Canadian Department of Energy,

Mines & Minerals, 1972, p. 2-6; Rudolfs, 1953, p. 319.)

The following alternatives were considered in developing the final rules;

(a) Change the regulation and broaden the methods by which coal-processing waste may be transported to the fill area.

(b) Retain present language of the regulation.

(c) Clarify the regulation to make it clear that end-dumping into waste disposal areas is not permitted.

The Office chose to retain the proposed regulation language in Section 816.81(a) which requires that coal-processing waste be hauled or conveyed to a fill area and placed in a controlled manner.

The MSHA requirements for disposal of the coal-processing waste have been in effect for several years. Considerable success has been achieved by requiring that coal waste material be transported to lifts under construction and compacted in two-foot layers (Coalgate, *et al.*, p. 41; MESA, 1976, p. 3; EPA, 1978, p. 73-79). To permit end-dumping of coal waste material into a coal waste bank is contrary to current prudent engineering practice. End-dumping creates large unstable areas of potentially combustible material which is easily susceptible to erosion. Placement of coal processing waste in lifts retards the airflow across the waste material, thus preventing combustion.

§ 816.82 Coal processing waste banks: Inspection.

(1) Inspections of coal processing waste banks by an engineeer or qualified person approved by the regulatory authority are intended to assure observance of any physical changes in the waste bank which might signify potential failure, excessive erosion, or other hazards to health and safety or the environment and to control construction practices which could lead to such changes (USMESA, 1975, p. 98; see also Bonny and Frein, 1973; CDEMR, 1972; Clough, 1972; Comptroller General of the U.S., 1977; National Coal Board, 1970; Wood, et al.).

(2) Commenters stated that the weekly inspection requirement was too stringent, especially for small sites which have a low hazard potential. They requested that the regulation be changed, basing the inspection frequency on the potential hazard to human life and property.

The following alternatives were considered in developing the final rules:

(a) Change regulation to read "the inspection shall occur at least once each week *or at such other inspection frequencies as the regulatory authority may require* beginning within 7 days after preparation of the disposal area begins and * * *."

(b) The word "quarterly" should replace the wording "once each week."

(c) Retain present language of regulation.

The Office has chosen to require quarterly inspections of all waste banks but the regulatory authority may require more frequent inspection intervals based on the hazard potential to human life and property, or potential damage to land, air, and water resources.

Quarterly inspections of coal-processing waste banks was chosen to assure that effective monitoring of changes at coal waste banks will be conducted by the operator (USMESA, 1975, p. 98) and is consistent with the requirements of Section 816.72(i). Large amounts of coal waste are produced at many mine sites, increasing the possibility of potential hazards. However, waste banks at smaller mines will not change significantly over long periods of time. The regulatory authority has the option to require more frequent than quarterly inspections if conditions at the specific coal waste bank warrants such action.

The regulations require the maintenance of records of inspections so that trends in physical changes can be monitored by the regulatory authority. Notification to the regulatory authority of potential or imminent emergency situations will allow prompt formulation of remedial action and for the institution of emergency action to safeguard life, property and the environment.

§ 816.83 Coal processing waste banks: Water control measures.

(1) This Section outlines minimum requirements to be included in the design of water control measures associated with the design of coal processing waste banks. Adequately designed subdrainage systems control the drainage beneath a disposal area so that this drainage is controlled without endangering the structural integrity of the waste bank (USMESA, 1975, pp. 5.37-5.43; USACOE, 1952, p. 1; see also ASCE, 1966, CEDMR, 1972; Cedergren, 1967, Coalgate, et al., 1973; Good, et al., 1970; Harr, 1962; Leonards, 1962; Tolman, 1937; WVDNR, 1975, p. 2; Taylor, 1948, p. 406-7; EPA, 1976, p. 32-33, National Coal Board, 1970, p. 56; Loy, et al., 1978, p. 82; U.S. Comptroller General, 1977, p. 1-2).

(2) Response to specific comments on the proposed rules are:

(a) Commenters stated that the large underdrain requirements for valley fills should not be applicable to coal waste disposal areas. The following alternatives were considered in developing the final rules:

(i) Change the language of the regulations to require the design of a subdrainage system for site specific conditions.

(ii) Retain the present language of the regulations.

The Office has chosen to change the language of the regulation to allow the design and construction of a subdrainage system for site-specific conditions.

Subdrainage networks allow for control of groundwater beneath a disposal area. Lack of control can result in groundwater saturating portions of the fill and, as a consequence, endangering the structural integrity of the embankments (Bishop, 1973, pp. 336-337; Coalgate, et al., 1973, pp. 25, 28, 93, 95; U.S. Comptroller General, 1977, p. 1-2; U.S. Navy, 1974, p. 7-7-1; 15 National Coal Board, 1970, p. 8; EPA, 1978, pp. 69-70; Taylor, 1948 p. 405-406).

(b) Commenters suggested that section 816.83(b), which requires that diversion ditches around coal-processing waste banks be designed on the basis of a 24-hour duration, 100-year frequency storm be made less stringent. The following alternatives were considered in developing the final rules:

(i) Use a design storm of lower intensity.

(ii) Change to 6-hour duration, 100-year frequency storm.

(iii) Retain proposed language of the regulation.

The Office chose to retain the proposed regulation. The requirement for diversion ditch design based on the 24-hour, 100-year frequency storm is compatible with MSHA regulations and current prudent engineering practices. Diversion ditches are necessary to reduce the potential for creating impoundments behind coal waste areas and to reduce the possibilities of erosion on the face of the waste bank. Water infiltration into the fill, which is prevented in part by diversions, would decrease the overall stability of the embankment (Lambe and Whitman, 1969, p. 432; Terzaghi and Peck, 1967a, p. 61). A lower intensity or a 6-hour duration storm were considered as design events. However, the 24-hour storm generally produces a runoff larger in total volume and peak than the 6-hour storm and design to that level will provide more substantial long-term protection to the embankment. OSM believes that the risk to public safety and to property posed by potential failure of coal waste embankments justifies the use of the more intense design storm (West Virginia Governor's Ad Hoc Commission of Inquiry, 1972, pp. 1.1-1.12; Thomson and Rodin, 1972, pp. 8-13).

§ 816.85 Coal processing waste banks: Construction requirements.

(1) Section 816.85 (a) and (b) contain requirements that are within gen-

eral acceptable engineering practice and the basis for these requirements is discussed in the Preamble to Sections 816.71-816.72.

(2) Section 816.85 (c) requires that coal processing wastes be placed in lifts not to exceed 24 inches and compacted to a maximum dry density no less than 90 percent of Standard Proctor. Basis for these requirements are contained in Section 816.85 (4)(b), (4)(c), and (4)(d) of the Preamble for this section.

(3) Section 816.85 (d) requires that coal processing waste banks be covered with a minimum of 4 feet of the best available non-toxic and non-combustible material. Coal processing waste material is quite variable in physical and chemical properties. Adequate cover must be applied to prevent upward migration of toxic salts that may affect plant roots and provide a barrier to prevent oxidation of acid-forming material (Brundage, 1974, pp. 183-185; Dean and Havens, 1972, pp. 452-453; see also Adams, et al., 1974; Calhoun, 1968; CDEMR, 1972; Capp, et al., 1975; Capp and Gillmore, 1974; Coalgate, et al., 1973; Czapowskyj and Writer, 1970; Czapowskyj and Sowa, 1973; Davidson, 1974; Eigenbrod, 1971; Glover, 1971; James, 1966; Jones, et al., 1973; Leroy, 1972; National Coal Board, 1973; Peterson and Gachwind, 1973; Sorrell, 1974; Spirik, 1973; Thompson and Hutnik, 1971; USMESA, 1975; Welsh and Hutnik, 1972; White, et al., 1973; Wood and Thirgood, 1955; Barthauer, *et al.*, 1971, p. 6).

(4) Responses to specific comments on the proposed rules are:

(a) One commenter suggested that Section 816.85(a) be altered to allow flexibility in the design of coal-processing waste banks bordering streams. In developing the final rules, two alternatives were considered:

(i) Change the regulation to allow the operators greater flexibility in the design of waste banks but require all changes to be approved by the regulatory authority. Change Section 816.85(a) to "The coal-processing waste banks shall be constructed in compliance with this section and if applicable Sections 816.71 and 816.72."

(ii) Retain language of the proposed regulation.

The Office chose to reject the proposed alternative because of the necessity in the design of any earth structure to follow standard engineering practice and procedures which Sections 816.71 and 816.72 provide. It cannot be left to the discretion of the operator to determine if these sections should be followed. This is true particularly in regard to the water control measures and stability requirements.

(b) Commenters stated that the proposed eight-inch lift thickness for coal processing waste disposal was not necessary. According to commenters, adequate compaction for stability and the prevention of combustion can be obtained using MSHA's two-foot requirement. In developing the final rules, two alternatives were considered:

(i) Change the regulation to allow coal-processing waste to be spread in layers no more than 24 inches in thickness.

(ii) Retain language of the proposed regulation.

The Office has chosen to change the proposed regulation to allow coal-processing waste to be spread and compacted in lifts no greater than 24 inches in thickness.

Several studies of fill construction and current prudent engineering methods support the position that refuse banks can be constructed safely with two-foot lifts and with 90 percent compaction. Present MSHA test data show that 90 percent Standard Proctor dry density can be obtained in lift thicknesses exceeding 8 inches with compaction equipment commonly used (USMESA, 1975, pp. 8.65-8.68).

(c) Commenters objected to the 90 percent compaction criteria. Some stated it had no sound engineering basis and should be deleted from the regulations. Others wanted design specifics removed from the regulation. Commenters suggested the regulation be changed to read "to provide for compaction to design densities to prevent spontaneous combustion and provide the strength required for stability of the waste banks."

This suggestion was rejected because the 90 percent compaction criteria provides an objective standard to determine the effectiveness of the compaction procedure (Terzaghi and Peck, 1967a, p. 441). Since the degree of compaction depends to a large extent on the moisture content of the refuse material, it is important to be certain that compaction has reached a level where excess fluids have been removed from the waste material. Investigations have led to the conclusion that no one method of compaction is equally suitable for all types of soil (Terzaghi and Peck, 1967, p. 441). It is necessary, therefore, during the placement of the waste for the engineer to have the means for determining whether the specified compaction is being achieved (USMESA, 1975, pp. 9.107-9.110).

OSM has chosen to retain 90 percent as the maximum dry density requirement for compaction of coal processing waste. This density requirement, which is a normal construction specification for compacted fills (Terzaghi and Peck, 1967a, pp. 443-448; USNBYD, 1971, pp. 7.9.1-7.9.10), will:

(i) Assist in the prevention of combustion by reduction of airflow through the voids, a major factor in ignition and perpetuation of coal waste fires.

(ii) Act as an easily measured standard throughout the industry.

(iii) Allow the achievement of a bulk density more conducive to long-term stability of the fill than that of uncompacted material (USNBYD, 1971, pp. 7.9.1-7.9.10).

(iv) Achieve a surface more resistant to significant erosion than the uncompacted embankment surface (USMESA, 1975, pp. 8.65-8.68).

(v) Accommodate a greater amount of waste in a smaller area by reducing the total volume of the embankment.

(d) Commenters objected to the lift requirements and the 90 percent compaction criteria because it would eliminate many dewatering systems which operators elected to construct in order to eliminate the environmental hazard of large slurry impoundments. They claimed that the only alternative disposal method under the proposed rules would be slurry impoundment disposal for the fine refuse.

Current dewatering technology includes zoned embankment methods in which very wet fine materials are interlaced with or mixed with coarser spoil or waste in isolated areas of the embankment away from the outside slope. These materials, which may have been subjected to one or more dewatering processes to reduce them from a slurry state to their dewatered state, still contain too much moisture to be easily spread in lifts and compacted to 90 percent dry density. Over a period of time this material will drain or filter off its excess water becoming intrinsically more stable (USMESA, 1975, pp. 8.68-8.70). In the interim, careful placement of the wet fines, away from slopes, and careful mixing of fines with coarser material will help to maintain the stability of the embankment structure (USMESA, 1975, pp. 8.71-8.74).

In order to avoid requiring the construction of large slurry ponds for coal waste disposal, to avoid the environmental hazard associated with such ponds, and to avoid additional land disturbance and cost of designing and building such ponds, OSM has chosen to change the final rules to allow for the disposal of dewatered fine refuse on a waste bank. The statement "variations may be allowed on these requirements for the disposal of dewatered fine refuse (minus 28 sieve size) with the approval of the regulatory authority" was inserted in the final rules.

(e) Commenters suggested that coal processing waste need not be compacted if it is placed in depressions or pits. Two alternatives were considered in developing the final rules:

(i) Allow variation in compaction criteria for disposal of coal processing wastes in pits or depressions.

(ii) Retain the present language contained in the proposed rules.

One of the major purposes of compaction is the prevention of coal waste fires by reducing air flow through the material (see discussion in Section 816.85(c) above). Coal waste in pits or depressions will ignite if care is not taken to prevent conditions favorable to combustion (Comptroller General of the U.S., 1977, p. 2). In order to assist in preventing such combustion, OSM chose to retain the language of the proposed rules.

(f) Commenters suggested the final 4-foot cover requirement for coal processing waste was unnecessary to achieve adequate vegetation. Some of the commenters are concerned about the availability of adequate soil cover. This should not present a problem because the regulations require that only the original topsoil removed from the waste disposal site must be redistributed. Where the topsoil is thin, nontoxic spoil material can be used to achieve an adequate depth of cover.

The Office has decided that the regulations should require a 4-foot cover on coal wastes, unless it can be established by chemical and physical analysis that a thinner layer is adequate on nontoxic material for environmental protection and reclamation. The topsoil must be replaced in all cases. The regulatory authority may allow less than four feet of cover material based on physical and chemical analysis which shows that the requirements of Sections 816.111 through 816.117 will be met.

Covering of graded portions of the coal processing waste disposal area promotes vegetation, seals the fill from percolation of surface runoff, retards airflow to prevent combustion and controls erosion (Brundage, 1974, p. 183; Coalgate, et al., 1973, p. 52; CDEMR, 1972, pp. 7.10–7.16).

(g) Commenters stated that Section 816.85 is too restrictive and suggested that MSHA regulation 30 CFR 77.215(a) can adequately control the construction of coal processing waste banks. Two alternatives were considered in developing the final rules:

(i) Replace Section 816.85 with MSHA regulation 30 CFR 77.215(a).

(ii) Retain the language as presented in the proposed rules.

The first alternative was rejected by the Office because the purposes of these regulations and those of MSHA are different. Section 102 of the Act requires stronger environmental controls over mining than does the Coal Mine Health and Safety Act which primarily addresses problems relating to the safety of miners on the site. For this reason, it is appropriate for these regulations to be more restrictive than MSHA's regulations. This is necessary in order to protect the environment as required by Section 102(d) of the Act.

§ 816.86 Coal processing waste: Burning.

(1) This Section is established to set forth the requirement for extinguishing burning coal refuse banks in accordance with procedures approved by the regulatory authority and MSHA. The Office has relied on several reports to describe the health effects and numerous accidents and deaths at and nearby burning coal waste banks (McNay, 1971, pp. 8–14; Harrington and East, 1948, pp. 22–24). These incidents are unacceptable and as such the Office has taken the position that additional control measures are necessary to ensure that construction, maintenance, and abandonment practices are adequate to provide long-term protection.

(2) In recognition of the unilateral responsibilities between the Office and MSHA, the Office has taken the position that any action to be taken to extinguish a burning coal refuse fire must be in concurrence with MSHA standards before plans will be approved.

(3) Occurrences of severe accidents and deaths associated with the extinguishment of coal refuse fires (McNay, 1971, p. 12) clearly necessitates extreme caution and proper planning when dealing with fire control. The development of engineering and technical specifications for the issuances of notices for required remedial or maintenance work is established in Section 515(f) of the Act. Because of this legislative mandate and the potential impact of the problem, the Office has incorporated language similar to the MSHA standards in 30 CFR 77.215(j) requiring that burning coal refuse banks be extinguished only by persons authorized by the operator and knowing of the hazards and applicable control procedures.

(4) In Section 816.86(c) of the proposed regulations, acceptable control techniques for extinguishing coal refuse fires were listed. A number of demonstrations have been conducted which described many such control or abatement techniques (Andreuzzi, 1970, pp. 6–13; Carr, 1948, pp. 169–177; Dixon, 1967, pp. 4–13; Harrington, 1948, pp. 11–14; Flegal, 1973, pp. 13–46; Hebley, 1948, p. 38; Hebley, 1950, p. 337; Hebley, 1956, p. 29; and McNay, 1971, pp. 15–22). The effectiveness of these abatement techniques varied from temporary control to complete extinguishment (Flegal, 1973, pp. 16, 18, 20, 22, 24, 26, 28, 29–30, 32, 34, 36–37, 40, 41–42, 43–44, and 46). The proposed control techniques in the proposed regulations were intended to be a list of possible abatement techniques; however, their listing was construed to mean the only available, thus acceptable, extinguishment method. In addition, some of the techniques were found to be unacceptable to procedures approved by MSHA. The Office has, therefore, deleted any specific reference to these control techniques. The operator is referred to the above references to acquire data for the selection of the appropriate technique(s) for development of a contingency plan to prevent sustained combustion as required by Section 515(b)(14) of the Act and as required by Sections 780.13 and 784.13 of the regulations.

(5) Commenters asserted that the proposed regulations should be deleted because MSHA has established adequate controls for handling burning coal refuse. The Office has considered the arguments that adequate control for extinguishing burning coal waste has been adopted by MSHA regulations (30 CFR 77.214, 77.215 and 77.215–4). The Office believed that these arguments were unfounded on the basis of the testimony in the legislative history which discussed the need for additional safety and environmental protection with respect to disposal of coal processing waste and their inherent capability of combustion. In part, this is supported by intent and purpose of health and safety legislation which basically provides for the health and well-being of miners and not the general public and environment (U.S. Comptroller General, 1977, pp. 1-2).

OSM is required under Section 515(b)(14) of the Act to ensure that materials which constitute "a fire hazard are treated or buried and compacted . . . to prevent sustained combustion." OSM has, therefore, rejected the comments as being contrary to the intent and purpose of the Act.

§ 816.87 Coal processing waste: Burned waste utilization.

(1) This Section allows utilization of burnt coal processing waste, known as "reddog," after the regulatory authority approves plans for its utilization. The plans shall describe the operational procedures to be utilized during the excavation and removal of the material and outline safeguards that must be carried out in case an adverse environmental event occurs or a hazardous working condition is created. These plans and associated drawings shall be certified by a qualified engineer. Reddog removal operations have historically been plagued by dust explosions, highwalls in refuse collapsing as a result of undercutting, loss or damage of equipment and personnel, and injuries resulting from gas inhalation or falls into voids resulting from volume change during burning

(McNay, 1971, p. 12, U.S. Comptroller General, 1977). The intent of this Section is to protect the operator and persons in surrounding areas from the potential hazards associated with these activities while also requiring reclamation and other operational procedures consistent with the Act.

(2) Commenters stated that burned coal-processing waste should be allowed in offsite construction, without requiring approval by the regulatory authority. Two alternatives were considered in developing the final rules:

(a) Change the language of the regulation to allow the use of burned coal processing waste without requiring regulatory approval.

(b) Retain language of the proposed rules.

The Office chose to delete the regulation requiring regulatory authority approval for use of burned coal processing waste for offsite construction purposes. Burnt coal processing waste is routinely used by local government and private enterprise for road construction, land fills, aggregate, and other purposes (Dixon, 1978, Part II, pp. 1-16). The Office believes that there is no need for the regulatory authority to become involved with offsite approval. The final rules require, however, that approval for removal and reclamation plans of the area be obtained from the regulatory authority.

§ 816.88 Coal processing waste: Return to underground workings.

(1) This Section requires that underground waste disposal must be approved by the regulatory authority and conducted in accordance with a proper plan. The plan is required to protect the operator from dangerous situations which might arise in placement of waste into old mine workings and also to ensure the operation would not affect the environment by creating down-dip discharges into adjacent watersheds or ground water systems or aggravate subsidence in another area.

(2) One commenter suggested that MSHA be consulted before the regulatory authority gives approval to dispose of coal-processing waste underground. Three alternatives were considered in developing the final rules:

(a) Addition to regulation—"the waste disposal program shall be submitted to MSHA District Manager for approval."

(b) Retain language in the proposed rules, and

(c) Require MSHA concurrence during the permitting process.

Since coal-processing waste can be combustible, physically unstable, and toxic-forming, it may not be a suitable product to put into underground areas unless there is absolute assurance that no hazardous side effects will be introduced to adjacent working areas. Since MSHA is concerned with the safety of underground coal mines, the agency must be consulted during the permitting process before waste is put underground. Therefore, the third alternative was chosen. The final rules require that MSHA and the regulatory authority approve the disposal plan before any coal processing waste can be returned to underground workings.

§ 816.89 Disposal of non-coal wastes.

Authority for this Section is found in Sections 102, 201, 501, 503, 504, and 515 of the Act. This Section specifies requirements for the procedures to be followed in the disposal of non-coal wastes generated from surface coal mining operations. The utilization of these procedures will minimize environmental degradation caused by improper disposal procedures.

Technical literature used in formulation of this Section include:

Brunner, D. R., and Keller, D. J., 1972, Sanitary Landfill Design and Operation, U.S. Environmental Protection Agency Report SW-65ts, 59 pp.

Sorg, T. J., and Hickman, H. L., 1970, Sanitary Landfull Facts, U.S. Department of Health, Education, and Welfare Publication SW-4ts, 30 pp.

Paragraph (a) of this Section specifies the manner in which non-coal wastes must be disposed. Many types of non-coal wastes are generated from coal mining operations. Specific attention must be given to these solid wastes in order to minimize surface and groundwater pollution. There are a number of environmentally acceptable methods for disposal of non-coal waste. (Sorg and Hickman, 1970, p. 24).

Paragraph (b) specifies that non-coal wastes must be disposed of in only designated sites within the permit area and that such disposal areas must be completed, covered and vegetated upon completion of disposal operations.

Paragraph (c) specifies that areas in which non-coal wastes cannot be disposed.

The following comments were received on Section 816.89.

(a) Several commenters objected to Section 816.89(a) because disposal of non-coal wastes is already controlled by the solid waste disposal regulations of other Federal and State agencies. These commenters suggested that this Section be deleted from the final regulations. This suggestion was rejected and the final rules remain as proposed because Section 501(a) of the Act require rules covering a permanent regulatory procedure for surface coal mining operations and Section 515(b)(11) of the Act require specific performance standards to be developed for waste disposal, of which non-coal waste is one type.

(b) Several commenters suggested the word "timber" be deleted from the final rules in Section 816.89(a). They stated that the wording as proposed could be interpreted to mean that all trees that are cleared from the area to be stripped must be disposed of by these requirements. This suggestion was rejected and the final rules remain as proposed because the proposed wording specifically refers to timber that has been used in mining activities and should not be interpreted to include timber cleared from surface mining operations.

(c) Several commenters suggested that the requirement for a minimum of 2 feet of soil cover in Section 816.89(b) be replaced by terminology such as "adequate soil cover" since in some cases there may not be enough available cover material to meet this requirement. This suggestion was rejected and the final rules remain as proposed because most existing laws governing sanitary landfills include more stringent requirements concerning covering of waste materials, and a minimum of 2 feet is a standard for sanitary landfill design (Brunner and Keller, 1972). The Office believes that the proposed wording of the rule should be maintained to give authority for the regulatory authority to require a minimum environmental protection where local laws are not enforced.

§§ 816.91-816.93 Coal processing waste: Dams and embankments.

Authority for these Sections is found in Sections 102, 201, 501, 503, 504, 515, and 517 of the Act.

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33 U.S.C. 1151-75 (Federal Water Pollution Control Act)

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30 CFR 77.215 (Refuse piles; construction requirements)

30 CFR 77.216 (Water, sediment, or slurry impoundments and impounding structures; general)

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Recent dam failures have sparked a movement nationwide to evaluate the potential hazard presented by dams. Sections 816.91-816.93 are intended to prevent the instability and failure of coal processing waste dams leading to excessive sedimentation of surface water systems, contamination of ground and surface water with acid-forming or toxic-forming or otherwise harmful substances, or hazards to life and property, such as occurred after the Buffalo Creek dam failure in 1972. As promulgated in 30 CFR 77.216, MSHA has regulated water, sediment, or slurry impounding structures which fulfill minimum size and storage volume criteria. Those provisions regulate structures to protect miners on mine property, whereas Sections 816.91-816.93 augment the protection of public health, encompassing safety and environmental protection. Sections 816.91-816.93 pertain to dams and embankments that are totally or partially constructed of coal processing waste or that impound coal processing waste. These provisions do not apply to earth, concrete, or other types of dams which may exist in the permit area unless they are intended to impound coal processing waste. Permanent water impoundments, however, are covered under Section 816.49, and sedimentation ponds are regulated under Section 816.46.

These regulations cover all dams and embankments constructed of coal processing waste or intended to impound coal processing waste, whether temporary or permanent and whether or not they meet the size or other criteria of 30 CFR 77.216. The regulations apply to all stages of design, location, construction, operation, maintenance, enlargement, modification, removal, or abandonment of the structures.

The final rules were developed by the incorporation-by-reference of SCS design requirements contained in Section 816.49 as the design criteria to be followed in designing all impoundments, including coal processing waste dams and embankments. Because of this, the requirements contained in Sections 816.92(c), 816.91(a), 816.91(b), 816.91(c), and 816.91(d) of the proposed rules are now contained in Sections 816.49(d), 816.49(f), 816.49(g), 816.49(h), and 816.49(i), respectively, of Section 816.49. These requirements are now in Section 816.49 because they are general requirements that are applicable to all dams and impoundments. Specific design requirements that were contained in the proposed Sections 816.93(b) and 816.93(g) and portions of Sections 816.93(c) and 816.93(d) were eliminated from these final regulations because the requirements are adequately covered in the SCS design criteria incorporated by reference in Section 816.49 and applicable to these structures.

General comments received on Sections 816.91-816.93 of the proposed rules expressed various concerns ranging from potential conflicts and inconsistencies to duplications of this Section when comparing it to similar MSHA requirements. These comments were accepted in part and the final regulations were modified to reference MSHA regulations directly when the rules overlap. Specific requirements which were not contained in MSHA rules were moved to Section 816.49 if they related to standard design or construction requirements for all dams and impoundments, whereas special design or construction criteria for waste dams and impoundments were reordered for clarity and remain in the final version of these Sections.

§ 816.91 Coal processing waste: Dams and embankments.

The requirements of Section 816.91 prohibit use of waste in dam construction, unless proven as a suitable fill material, in accordance with standard engineering procedure. In accordance with sound practice, material which fails to exhibit the proper strength necessary to achieve stability is not allowed for use in dam construction. (ASCE, 1977, pp. 475-476; Busch and others, 1974, pp. 1-6; Canada DEMR, 1977, pp. 38-50; Moulton, 1973, pp. 1-3; National Coal Board, 1970, pp. 76-78; USBR, 1973; pp. 254-261; USMESA, 1975, pp. 4.2-4.5. See also ASCE, 1969; Busch and others, 1975; Bishop and Henkel, 1957; Bishop, 1973; Cassagrande and McIver, 1970; Hirschfeld and Poulos, 1973, Hvorsleve, 1949; Justin and others, 1945; Kealy and Williams, 1970; Kealy and Busch, 1971; Lambe and Whitman, 1969; National Coal Board, 1972; Taylor, 1948; Ter-

zaghi and Peck, 1967a; Terzaghi, 1943; USACOE, 1960; USBOM, 1973a; USBOM, 1973b; W. Va DNR (no date); Wood and others, 1976.)

Responses to specific comments on Section 816.91 are as follows:

1. A number of commenters suggested that the phrase ". . .or intended to impound coal processing waste" be deleted from the final regulations. They cited the May 3, 1978, decision by the U.S. District Court for the District of Columbia (In Re: Surface Mining Regulation Litigation, 452 F. Supp. 327 (D.D.C. 1978)) which enjoined a similar provision in the interim regulations and restricted application of the regulation to ". . .dams merely impounding wastes." However, that ruling was based only on Section 515(b)(13) of the Act and did not consider the possible distrubances to the prevailing hydrologic balance that are prohibited in Section 515(b)(10) and the requirements regarding permanent impoundments found in Section 515(b)(8) of the Act. The alternative of reducing or eliminating the standard for dams impounding coal processing waste was rejected because of the need for prudence in designing a structure that has a high potential for creating damage and harm to both the environment and the public in downstream areas.

2. A few commenters recommended that additional restrictions on the use of coal processing waste in the construction of dams and embankments be added to proposed Section 816.93(a). One commenter specifically was concerned with the use of acid-producing coarse material as a dam construction material. This recommendation was accepted and the content of proposed Section 816.93(a) was modified in Section 816.91(b). In addition, the regulation was moved to Section 816.91 because it is a general requirement of considerable concern and should be contained in the general requirements Section.

§ 816.92 Coal processing waste: Dams and embankments: Site preparation.

Paragraph (a) of Section 816.92 requires clearing, grubbing, and removal of organic and other combustible material, a standard construction practice which is required in various regulations, texts, and publications pertaining to waste disposal and dam construction. (Justin and others, 1945, pp 749-753; USBR, 1973, pp. 211-212; USMESA, 1975, pp. 8.80-8.84. See also Compt. Gen of the U.S., 1977; Harrington and East, 1948; Hirschfeld and Paulos, 1973; Lambe and Whitman, 1969; Leonards, 1962; McNay, 1971; National Coal Board, 1972; Nunenkamp, 1976; Sherard and others, 1963; Terzaghi and Peck, 1967a; USSCS, 1969; W. Va. DNR, (no date); Woods and others, 1976.)

Paragraph (b) requires that surface drainage which may cause erosion to the coal processing dam be controlled by diversions designed to comply with requirements of Section 816.43. Diversions that divert upstream drainage from impoundment areas shall be designed to carry the runoff from a 100-year, 24-hour precipitation event. The diversion of the 100-year, 24-hour event is appropriate for permanent structures or structures which can constitute hazards to people, property, and the environment. (Canada DEMR, 1977, pp. 95-96; National Coal Board, 1970, p. 121. See also ASCE, 1972; Canada DEMR, 1972; Casagrande and McIver, 1970; Coalgate and others, 1973; Davis and Sorenson, 1969; Glover, 1971; Henderson, 1969; Hjelmfelt and Cassidy, 1975; Justin and others, 1945; Linsley and others, 1972; Linsley and others, 1975; Morris and Wiggert, 1972; Peterka, 1964; Rouse, 1950; Sherard and others, 1963; USBR, 1973; USDOT, 1961; USDOT, 1975; USMESA, 1976b; USSCS, 1973a; USSCS, 1975a; W. Va. DNR, (no date); Wood and others, 1976). Sediment control would be required to meet both effluent limitations under 33 USC 1151-75 and Sections 515(b)(10)(B) (i) and (ii) of the Act.

Responses to specific comments on Section 816.92 were as follows.

1. A commenter expressed concern about the reality of applying requirements of vegetation removal to special permafrost conditions in Alaska. The special conditions in Alaska are the subject of a study by the National Academy of Sciences and the National Academy of Engineering under a contract to the Office as required by Section 708 of the Act. A major objective of the study is to identify any provisions of the Act which should be modified because of unique conditions in the State. Pending completion of the study, the Office believes the unique conditions can be dealt with under 30 CFR 716.6, the interim program regulations for Alaska. As an alternative, these conditions can be adequately addressed in the Alaska State Program, and Section 731.13 (the "State window") provides appropriate means for satisfying the commenter's concern.

2. A number of commenters suggested that diversions should be constructed to safely pass a precipitation event with less than the 100-year recurrence interval required by Paragraph (b). Some commenters thought these were simple erosion control diversions, which are used to divert surface runoff away from the dam to prevent gully or fill erosion of the structure. Other commenters felt the diversions described were to divert all the storm runoff from a 100-year, 24-hour precipitation event away from the dam or embankment. In order to make this Section clearer a description of two types of permanent diversions has been included in the final regulations. The first type discussed is the diversion that controls erosion of the dam or embankment during and following construction. These diversions will not cause any major damage or result in an unsafe condition if they overtop, and they are to be designed to comply with the requirements of Section 816.43. The other type of diversion such as that commonly used around a slurry pond, to divert upstream drainage away from the impoundment area, is to be designed to handle the runoff from a 100-year, 24-hour precipitation event because if any overtopping were to occur, it would interfere with the function of the dam or embankment. Changes were made to the final regulations to incorporate the intent of all these comments.

3. Several commenters suggested that the requirement for sediment control structures at the discharge of all diversion ditches was too restrictive and did not allow for situations where diverted water had never passed over disturbed ground. The regulations also require that each diversion comply with Sections 816.41-816.46. These Sections include a variety of ways to control discharges; structures are only one of the ways. The wording contained in the proposed regulations was conflicting and is corrected in the final regulations by changing "structures" to "measures." The proposed rules referred to Sections 816.41-816.55 rather than 816.41-816.46, which was a typographical error that is corrected in the final regulations.

§ 816.93 Coal processing waste: Dams and embankments: Design and construction.

Section 816.93(a) establishes minimum design criteria for coal processing waste dams. SCS design criteria contained in Section 816.49 are modified to include additional freeboard and stability analysis criteria.

Three feet of freeboard as required by Section 816.93(a)(1) is a standard design freeboard utilized between design-storm and top-of-dam elevations. The freeboard is intended to prevent overtopping by waves and also to counter frost action. (USACOE, 1975, pp. 9-11; USBR, 1973, pp. 274. See also Hirschfeld and Poulos, 1973; USICLD, 1970; USDOA, 1976; USMESA, 1976; USSCS; 1975b; W. Va. DNR, (no date).) This design freeboard is required above the maximum water elevation contained in the SCS design criteria (Ifft, 1978a). Ifft (1978a) is a reference that outlines specific requirements, above those contained in SCS design criteria, that the U.S. Army Corps of Engineers requested in

the final rules before the Chief of Engineers would concur as required in Section 515(f) of the Act. Alternatives for smaller freeboard allowances were considered but rejected because of perceived need for prudence in designing a structure that has such a high potential for creating damage and harm to downstream areas.

Factors of safety contained in SCS design criteria and modified by Section 816.93(a)(2) are taken from standards currently used by various State and Federal agencies for construction and long-term analyses. (Canada DEMR, 1977, pp. 71–81; National Coal Board, 1970, pp. 119–121; USMESA, 1975, pp. 5.142–5.144. See also Algermissen. 1969; Bishop, 1955; Busch and others, 1974; Busch and others, 1975; Canada DEMR, 1972; Casagrande and McIver, 1970; Casagrande, 1937; Cedergren, 1967; Griffiths and King, 1965; Harr, 1962; Hirschfeld and Poulos, 1973; Kealy and Soderberg, 1969; Kealy and Williams, 1970; Kealy and Williams, 1971; Kealy and Busch, 1971; Lambe and Whitman, 1969; Lambe, 1951; Marks, 1975; Morgenstern and Price, 1965; Newmark, 1965; Sherard and others, 1963; Taylor, 1948; Terzaghi and Peck, 1967a; Terzaghi, 1943; Tolman, 1937; USBR, 1973; USBOM, 1973a; USMESA, 1976b; USNBYD, 1971; USSCS, 1968; W. Va. DNR (no date); Wood and others, 1976).

Foundation design as required by Section 816.93(a)(3) is an integral part of any dam or embankment design. Lack of proper foundation information could lead to several types of physical failure of the structure. ASCE, 1977, pp. 475–492; Canada DEMR, 1977, pp. 26–29; USMESA, 1975, pp. 5.12–5.14. See also ASCE, 1974; Babcock and Hooker, 1977; Bishop, 1973; Casagrande and McIver, 1970; Forrester and Whittaker, 1976a; Hanna, 1973; Hirschfeld and Poulos, 1973; Holland, 1965; Hvorslev, 1949; Justin and others, 1945; Lambe and Whitman, 1969; Leonards, 1962; Taylor, 1948; Terzaghi and Peck, 1967a; USACOE, 1960; USBR, 1974; USDA, 1969; USMESA, 1976b; USNBYD, 1971; W. Va. DNR, (no date).)

Paragraph (b) requires properly designed spillways which ensure the hydrologic and structural adequacy of the structure. Inlet and outlet design allows for safe passage of runoff from the drainage area with a minimum of disturbance and with maximum efficiency. (Canada DEMR, 1974, p. 92; USMESA, 1975, pp. 6.169–6.191. See also ASCE, 1972; Brater and King, 1976; Chow, 1959 and 1964; Davis and Sorenson, 1969; Henderson, 1969; Hirschfeld and Poulos, 1973; Hjelmfelt and Cassidy, 1975; Linsley and others, 1949; Linsley and others, 1975; Morris and Wiggert, 1972; Newmark, 1965; Sherard and others, 1963; USACOE, 1965; USBR, 1973; USDOT, 1961, 1965, 1967, 1975; USMESA, 1976b; USSCS, 1975b; W. Va. DNR (no date.)

Paragraph (c) specifies that the impoundment be designed with a minimum drawdown requirement. The requirement for 90-percent drawdown of the storm-water volume within 10 days is a standard engineering requirement for dams. This provision allows for evacuation of the storm water held in the reservoir during the design rainfall event and satisfies two major design functions:

a. Allows for "back-to-back" design storms. If the storm runoff were to be stored for any period of time, the occurrence of a second design rainfall, or even lesser storm, could overtop the dam embankment and subsequently initiate breaching and failure of the structure.

b. Drawdown of the storm water precludes the upper portions of the embankment and surrounding natural slopes from achieving steady-state seepage. Therefore, the embankment's phreatic surface remains stable. Raising the phreatic surface increases the hydraulic gradient through the structure, potentially leading to internal erosion and saturation, thus greatly increasing the chances of failure. (USMESA, 1975, pp. 6.206–6.207. See also Harr, 1962; USACOE, 1952 and 1975; USBR, 1973; USSCS, 1972).

Responses to specific comments on Section 816.93 are as follows:

1. Many commenters indicated that the design requirements contained in Section 816.93 are too rigid and need to be more flexible to allow for site-specific analysis. One of these commenters specifically recommended that SCS design criteria be used to design all dams and embankments including coal processing waste dams and impoundments. Three alternatives were considered in developing the final rules and regulations:

(a) Retain the detailed design criteria contained in the proposed rules in Section 816.93.

(b) Eliminate the detailed design criteria and rely on a qualified registered professional engineer certification that adequate design criteria were used on a site specific basis to achieve a safe structure.

(c) Reference acceptable minimum design criteria such as those used by the Soil Conservation Service and allow the design engineer the flexibility of making site-specific determinations and developing acceptable methods of analysis.

The final rules were developed using the third alternative, by incorporation-by-reference of SCS design criteria and then modifying these criteria where necessary to adapt them to coal processing waste dams. Using this approach, all dams and impoundments other than sedimentation ponds will be designed using the same general design criteria. SCS design criteria contain a broader set of design parameters which provide for a safe and sound design for all dams and impoundments. Referencing these design criteria eliminated the need for proposed Sections 816.93(b), (c), and (g) because these requirements are covered in the SCS design criteria. A new Section 816.93(a) was added to the final rules and regulations to reference the SCS design requirement contained in Section 816.49.

The first alternative was rejected because it does not provide minimum design criteria concerning a number of important areas and adding these criteria would provide unnecessary volume to the final rules. The second alternative was rejected because this alternative does not provide minimum design criteria, as a basis for the regulatory authority to measure against, when reviewing and approving the final design. It was also rejected because the Act requires in Section 515(f) that the Secretary promulgate design criteria.

2. Several commenters recommended that proposed Section 816.93(b) be modified to allow variations for designing for probable maximum precipitation events. This recommendation is reflected in the final rules and regulations because the proposed Section 816.93(b) has been removed and SCS design criteria now dictate that design frequencies can vary for different sizes and classes of dams and impoundments.

3. Several commenters recommended that the 3-foot freeboard requirement in proposed Section 816.93(d) be removed from the final rules. This recommendation was not accepted because this is a requirement that is consistent with MSHA and COE design criteria. (Ifft, 1978a; USACOE, 1975, pp. 9–11; USMESA, 1976b, p. 1). The final rules were developed retaining this freeboard requirement and, at the request of the Corps of Engineers, this freeboard requirement was further clarified by defining the maximum water elevation from which point the freeboard is measured (Ifft, 1978a). This requirement is contained in Section 816.93(a)(1) in the final rules.

4. A commenter recommended that the requirements to add 3 feet of freeboard above the water elevation resulting from the probable maximum precipitation event be eliminated from the final rules. This recommendation was not accepted because this amount of freeboard is required to keep wave action from overtopping the dam when the maximum water elevation occurs. In those cases, where the maximum water elevation is determined,

based on the probable maximum precipitation, the freeboard is still required above this elevation (Ifft, 1978a).

5. A commenter recommended that the stability analysis requirements for coal processing waste dams should differ according to the size and class of structures. This recommendation has been incorporated into the final rules by referencing SCS design criteria. SCS design criteria contain all the requirements in proposed Section 816.93(e) except for the safety factor of 1.5 for partial pools with steady seepage saturation conditions. The safety factor of 1.5 has been included in Section 816.93(e)(2) as an addition to the SCS criteria. Small structures that do not meet the size or other requirements of MSHA regulations will not require a stability analysis, but larger dams must be designed to meet minimum safety factors for different loading conditions.

6. Several commenters mentioned concern relative to the seismic safety factor contained in proposed Section 816.93(e). One of these commenters recommended that the seismic safety factor be changed to 1.2 which is identical to MSHA criteria (USMESA, 1967b, p. 3). The other commenters recommended that there should be modification of the seismic loading criteria based on the probable occurence and magnitude of such seismic activity. These recommendations were accepted in developing the final rules. SCS design criteria have been modified in Section 816.93(a)(2) to include the 1.2 safety factor for seismic loading, and the SCS criteria contain seismic coefficients for modifying the stability analysis for different seismic activity zones (USSCS, 1976a, p. 4-3).

7. A commenter suggested that safety factor references should specifically apply to shear failure. This comment was not accepted for the final rules because the SCS design criteria which are incorporated-by-reference in Section 816.49 include procedures to analyze shear failure as well as other important considerations affecting the stability of the structure.

8. Several commenters recommended that the 10-day drawdown requirement contained in proposed Section 816.93(h) either be eliminated or modified to allow the regulatory authority to approve other criteria in lieu of these drawdown criteria. This recommendation was not accepted and the drawdown criteria are retained in Section 816.93(c) of the final rules. This requirement is necessary in order to guard against the possible overtopping of the dam that may occur if storm runoff is delivered to the impoundment area before the design storage from a previous storm is evacuated (USMESA, 1975, pp. 6.206–6.207; USSCS, 1976a, pp. 6.1–6.2).

9. A commenter suggested further clarification in Section 816.93 which would allow pumps as a means to drawdown coal processing waste dams. The comment was accepted and the final regulations modified to remove the specific reference to spillways and decants as a means to dewater the impoundment. This allows any acceptable means to achieve the drawdown requirement that is presented in the detailed design plan and approved by the regulatory authority.

10. A commenter recommended that proposed Section 816.93(i) requiring signs at coal processing waste dams be eliminated since it duplicated the requirements contained in the Mine Safety and Health Administration regulations. This recommendation was accepted and Section 816.93(i) was eliminated from the final rules. In order to assure that OSM and MSHA regulations are consistent concerning sign requirements at structure sites, a cross-reference to Mine Safety and Health Regulations 30 CFR 216-1 was added to Sections 780.25(b)(2), (c), and (e).

11. A commenter suggested that the distance between the clear-water decant structure and the slurry input point be maximized to reduce possible contamination of decanted water. In developing the final rules, two alternatives were considered in response to this comment: (a) include a paragraph in Section 816.93 that would itemize design requirements to specify minimum detention-time requirements for coal processing waste dams similar to these contained in Section 816.46(c) for sedimentation ponds; and, (b) do not include a specific discussion of criteria itemizing minimum requirements that must be met to guard against the possible contamination of decanted water released from coal processing waste dams and impoundments.

The final rules were developed using the second alternative because adequate control of the contamination of decanted water is covered in Sections 816.41 and 816.42 of the final rules and do not need to be repeated in Section 816.93.

12. A commenter suggested that reclaimed refuse from impoundments should be contained in nonstructural areas of refuse piles. Handling and disposal of coal processing waste is adequately covered in Sections 816.81-816.88. The commenter's concern is considered there and does not require specific changes in the waste dam provisions of the final regulations.

13. A commenter expressed concern about the potential effect of incoming water where a large drainage area exists above coal processing waste dams and embankments. An alternative of establishing mandatory restriction of the drainage area behind these impoundments was considered but was not accepted in the final regulations because, in some cases, it may be impossible to physically divert all the incoming drainage (USMESA, 1975, pp. 6.26-6.29), and the designer of the coal processing waste dam should have the latitude to design storage capacity or other means into the structure to control this drainage. Drainage areas above slurry ponds and the potential adverse effects during high-precipitation periods are an important consideration at the time of the design. The regulations require effluent limitations to be met at all discharge points, and upstream diversions or any other prudent measures to accomplish these limitations would be an integral consideration at the time of design. The comment did not result in any specific change to the final regulations.

§ 816.95 Air resources protection.

Section 816.95 specifies fugitive dust control measures available to coal operators and State regulatory authorities to control fugitive dust from surface coal mining and reclamation operations. This Section, in conjuction with Section 780.15 is promulgated to implement, in particular, Sections 508(a)(9) and 515(b)(4) of the Act. Other statutory authority for this section is contained in Sections 102, 201, 501, 503, 504, 508, 510, 515 and 517 of the Act. Section 816.95 requires the operator to plan and employ fugitive dust control measures as an integral part of site preparation, coal mining, and reclamation operations. The fugitive dust control measures to be used will depend on applicable Federal and State air quality standards, climate, existing air quality, size of the operation, and type of the operation. Section 816.95(b) list necessary control measures depending on such criteria.

The regulatory authority is required to review and approve the fugitive dust control plan, based upon applicable Federal and State air quality standards, climate, existing air quality in the area affected by mining, and the available technology. If the operator fails to submit an adequate fugitive dust control plan meeting these criteria, the regulatory authority is required to specify necessary fugitive dust control measures, including, but not limited to, measures listed in Section 816.95.

Extensive public comments were received on proposed Section 816.95. Some of these comments overlapped comments received on the proposed permit requirements for air quality protection. The preamble discussion supporting Section 780.15 is, therefore, incorporated by reference.

(1) Commenters suggested that Section 816.95(a) implied that the regula-

tory authority was required to design fugitive dust control plans for operators in the first instance. Commenters added that the regulatory authority should "approve or disapprove" control plans rather than "specify" control plans so as to place the responsibility for designing an adequate plan on the mine operator.

Section 816.95(a) has been modified to clarify that the operator has the initial flexibility to design a fugitive dust control plan which meets the criteria of the regulations. This is consistent with Sections 508(a)(9) and 510(a) of the Act, which state that the applicant has the initial burden of specifying the steps to be taken to comply with applicable air quality laws. Should the applicant fail to submit an adequate fugitive dust control plan the regulatory authority is authorized to specify necessary measures. This is consistent with Section 510(a) of the Act which provides that the regulatory authority is authorized to ". . . grant, *require modification of,* or deny . . ." (emphasis added) an application for a permit based upon the requirements of the Act and regulations.

(2) Commenters suggested that fugitive dust control measures should be included under Section 780.15, permit requirements, rather than Section 816.95, performance standards.

Section 816.95 establishes minimum performance standards for surface mining activities as required under Section 515(b)(4) of the Act. The required performance standards must be complied with during all phases of surface coal mining and reclamation operations. Permit application requirements are designed to allow the regulatory authority to evaluate whether the proposed operation meets the requirements of the Act and regulations. The structure of the air quality regulations, which includes an ongoing monitoring program, envisions additions and adjustments in fugitive dust control measures which can most appropriately be made in the context of required performance standards rather than permit application requirements.

(3) Commenters said the language of Section 816.95(b) suggested that all 20 specified fugitive dust control measures must be employed. Commenters suggested language which would assure that such measures were discretionary rather than mandatory.

The proposed regulations mandated fugitive dust control measures, depending upon applicable air quality standards, climate, existing air quality, size of the operation, and type of the operation. The Office was not proposing that all 20 fugitive dust control measures be required in every case. In particular, regarding the control of fugitive dust from haul roads, some of the measures are obviously mutually exclusive. *See* Section 816.95(b) (2) and (3). The final regulations have been modified to clarify any potential ambiguity in the language. Fugitive dust control measures listed in Section 816.95(b) and (c) are required only, as necessary, to meet the criteria of Section 816.95(a) and (b).

(4) Commenters suggested that periodic water of roads should not be specified according to a quantitative standard. The Office has accepted this suggestion, to allow the regulatory authority the discretion to approve the minimum frequency of watering according to the criteria of Section 816.95(a) and (b.) The regulatory authority is given the flexibility to establish a quantitative standard or other methods to control fugitive dust from haul roads.

(5) Commenters suggested that chemical stabilization of unpaved roads should not include the requirements to mix dust palliatives into the upper one or two inches of the road surface. The Office has accepted this suggestion, to allow the operator the option of using crusting agents which may only penetrate the surface portion of the roadway.

(6) Some commenters further suggested that paving roads is not a cost effective method for controlling fugitive dust. The Office has decided to retain this section of the regulations for the following reasons:

Roads are the major source of fugitive dust from surface coal mining operations and generally are responsible for twice as many emissions as the next source. PEDCO Report at 65 (1978). When vehicles—especially heavy multi-tired vehicles—travel over an unpaved road, the force of the wheels on the road surface cause pulverization of surface material. Particles are lifted and dropped from the rolling wheels, and the road surface is exposed to strong air currents in turbulent shear with the surface. The turbulent wake behind the vehicle acts on the road surface after the vehicle has passed. Mann at 11.2-1 (1975). Because of the pulverization of particles, major portions of haul and access road dust can remain suspended in the ambient air, and portions of the dust can fall within the range of inhalable and respirable particulate matter (PEDCO Report at 56 (1978); Health Effects Considerations for Establishing a Standard for Inhalable Particulate 1-14 (1978); Morrow, at 83 (1973)). Uncontrolled fugitive dust from roads can thus pose a danger to public health and safety and the environment.

Several commenters contend that, regardless of impact, to build a paved haulroad system is impractical. The Office believes that paved haulroads should be an available fugitive dust control measure to be considered along with other available measures to control road dust under the criteria of Section 816.95(a) and (b).

The final regulations establish reasonable criteria to be utilized in determining necessary fugitive dust control measures. Under the Act, the size and type of operation, climate, existing air quality, and air quality standards are more appropriate criteria for determining necessary control measures. Based upon these criteria, a Western surface coal mine with an extended production life presents a particularly strong case for more permanent fugitive dust control measures than periodic watering of haulroads. The paving of roads is estimated to have a 90 to 95 percent control efficiency. (PEDCO Report at 116 (1976)). Moreover, paved haulroads can produce savings in haul truck tire wear in addition to controlling dust. (PEDCO Report at 110 (1976)). Thus, when compared with the control efficiences of other fugitive dust measures, the paving of haulroads is clearly an option which warrants consideration during the planning of surface mining activities.

(7) Commenters suggested that the requirement to promptly remove coal, rock, soil, and dust-forming debris from roads should be limited to paved roads. The Office has decided to retain the language of the proposed regulation. The intent of the regulation is to reduce fugitive dust from both paved roads and unpaved roads.

Paved roads with heavy layers of dust are not effective in controlling fugitive dust from heavy multi-tired vehicles. Such dust should be promptly removed to maintain the paved surface. It is equally true that, in spite of the addition of palliatives, a road surface can have its efficiency decreased by the deposit of coal, dust and debris, (PEDCO Report at 44-49 (1976)). Under such circumstances, it may also be appropriate to require the prompt removal of this material.

(8) Some commenters suggested that Section 816.95(b)(5) should be rewritten to clarify the requirement to restrict the speed of vehicles to control fugitive dust. The Office has accepted this suggestion. The quantity of dust emissions from a given segment of unpaved road varies linearly with the volume of traffic. In addition, emissions depend upon average vehicle speed. Field tests have shown that emissions are directly proportional to vehicle speed. (Mann 11.2-1 (1975)). If properly enforced, speed control regulations can reduce fugitive dust from roads. (Mann 11.2-4 (1975)).

(9) Other commenters suggested that the requirement to stabilize the areas adjoining roads should be deleted. The Office has retained this fu-

gitive dust control measure in the final regulations. Close observation of well-controlled haul roads reveals that much of the dust is generated near the edges of the roads where the surface has dried. (PEDCO Report at 45 (1976)). Stabilizing areas adjoining roads can help reduce surface wind speed across exposed sources and thereby fugitive dust. (PEDCO Report at 112, (1976)).

(10) Some commenters suggested that only unauthorized vehicles should be restricted from travel on other than established roads. According to them, legitimate mining activities, such as pick-up trucks associated with surveying crews and drilling, must perform their duties off established roads. The Office has accepted this suggestion. However, to reduce fugitive dust levels, only those vehicles necessary to perform duties off established roads should be authorized on other than established roads. (Mann, at 11.2-1-2-4 (1975)).

(11) Commenters suggested that the control measure to enclose, cover, water, or otherwise treat loaded haul trucks and railroad cars goes beyond Section 515(b)(4) of the Act. This section requires that operators stabilize and protect all surface areas affected by surface coal mining and reclamation operations to effectively control attendant air pollution. As has been stated previously, the phrase "surface coal mining and reclamation operations" is defined broadly in the Act. This phrase clearly covers the use of haul trucks and railroad cars to the extent necessary to carry out the purpose of the Act.

The Office has decided to retain this control measure in the final regulations. Minimizing the area of land disturbed, by careful planning, is an effective fugitive dust control measure consistent with Section 515(b)(4) of the Act. (*See also* PEDCO Report at 76-84 (1976), Identification of a Feasible Regulation for Controlling Localized Fugitive Dust Emissions, Appendix at 2, (undated)).

Further, Section 515(b)(4) is not limited to land surface. The Act requires that attendant air pollution from "*all* surface areas" affected by such operations must be controlled. Even assuming arguendo that Section 515(b)(4) of the Act is limited to land surface, to adequately "stabilize and protect" all such surface areas, control of attendant air pollution from transportation facilities may be necessary.

(12) Other commenters suggested that the requirement to use alternatives for coal handling methods, restriction of dumping procedures, and wetting of disturbed materials during handling and compaction of disturbed areas was unduly vague. The Office has decided to retain this language in the final regulations, to provide operators and the regulatory authority the flexibility to select from a mix of fugitive dust control measures to meet criteria of Section 816.95 moreover, in other general comments on the regulations, the same commenters said such flexibility was essential to take into account site specific conditions and promote innnovative control techniques. (Identification of a Feasible Regulation for Controlling Fugitive Dust Emissions, Appendix at 2-4. (undated)).

(13) Some commenters suggested that orienting mining piles so as to place temporary spoil piles or ridges perpendicular to prevailing winds to reduce wind erosion is impossible. According to them, the orientation of the pit is always determined by such factors as the variability in the mining operation. Other commenters suggested that orientation according to the proposed regulation could increase rather than decrease emissions. This requirement has been deleted in the final regulations. Other control measures in Section 816.95 (b) and (c) may be more successful in controlling fugitive dust emission.

(14) Commenters said that requiring conveyor systems, in lieu of haul trucks, and the covering of conveyor systems is beyond the authority of the Act and not feasible. Another commenter submitted photographs of a covered conveyor system for loading coal at Gulf Oil's McKinley Mine in Gallup, New Mexico. According to the commenter, these photographs, coupled with other submitted photographs, graphically show that major sources of fugitive dust can be effectively controlled.

The Office has retained this control measure in the final regulations. Conveyor systems may be used to transport material from the active mining area to the processing area or to deliver the processed material to the consumer. (PEDCO Report at 57-62 (1976)). Closed conveyor systems can reduce or eliminate the need for haul trucks and rail cars, thereby significantly reducing fugitive dust from surface coal mining and reclamation operations. Effective conveyor systems are now in use at Gulf Oil's McKinley Mine in Gallup, New Mexico and Amax's Belle Ayr Mine in Gillette, Wyoming.

(15) Further, a commenter suggested that the requirement to minimize the area of disturbed land should be deleted. This comment was rejected. Prompt reclamation is effective for controlling fugitive dust, by reducing the source of dust. Where We Agree at 207 (1977); Identification of a Feasible Regulation for Controlling Localized Fugitive Dust Emissions, Appendix at 2 (undated).

(16) A few commenters suggested that the planning of special wind break material would probably be ineffective in controlling fugitive dust. The Office has decided to retain this control measure in the final regulations. Wind can contribute to all of the mining fugitive dust sources. Diverse forms of windbreaks such as tall grasses, or grains adjacent to exposed areas can be appropriate control measures. (PEDCO Report at 112-113 (1976), Identification of a Feasible Regulation for Controlling Localized Fugitive Dust Emissions, Appendix at 1-4 (Undated)).

(17) Some commenters suggested that restricting the area to be blasted at any one time to reduce fugitive dust is impractical. This control measure has been retained in the final regulations. The shock fugitive dust load emitted into the ambient air can be reduced by limiting the area blasted at any one time. (PEDCO Report, 33-36 (1976)).

(18) Commenters suggested that the measure to restrict activities causing fugitive dust during periods of air stagnation should be deleted because it is impractical and inconsistent with the Clean Air Act. This control measure has been retained in the final regulations. The regulatory authority should require this measure consistent with applicable episodic air stagnation plans approved under the Clean Air Act. With the projected increase in coal production and attendant fugitive dust emissions, the regulatory authority is able to require, as necessary, the restriction of activities during periods of acute air pollution.

Commenters added that the Office should have more detailed monitoring regulations, specifying the required data and methodology.

Under the final regulations, monitoring becomes the central tool to judge the efficiency of the fugitive dust control program approved by the regulatory authority. An adequate monitoring program will not only signal the need for additional measures at the site, but also guide the regulatory authority in approving subsequent fugitive dust control plans. A monitoring program is mandatory for all Western surface mining activities with production levels in excess of one million tons per year. This assures that the majority of Western surface mines will be monitored.

(19) Commenters suggested that the requirement to extinguish any areas of burning coal should be deleted as spontaneous combustion of coal may be a function of water content which could be aggravated by this measure. This Section of the regulations has been retained. To the extent that water aggrevates spontaneous combustion of coal, methods other than wa-

tering may be authorized including layering and compaction, placement of day seals, and digging out "hot spots." See 30 CFR Section 816.86.

(20) The restriction of fugitive dust at spoil and coal transfer and loading points with water sprays and other devices may present severe problems, when applied to mobile sources such as draglines and shovels, according to some commenters. This Section of the regulations has been retained. Such control measures may be appropriate for reduction of fugitive dust from draglines and shovels. For example, a simple water spray device can reduce fugitive dust from such operations. (Identification of a Feasible Regulation for Controlling Localized Fugitive Dust Emissions, Appendix at 3 (undated); PEDCO Report at 5-71 (1976)).

(21) A few commenters suggested that Section 816.95(c) should be modified, to allow the operator to show that no additional control measure should be required because the standard was caused to be violated in part by non-mine related sources. Other commenters suggested that the regulatory authority should have a mandatory duty to impose additional measures should a violation of air quality standards occur. Commenters suggested that the operator should have the discretion to apply additional fugitive dust control measures.

This Section has been reworded to provide the regulatory authority with the discretion to require additional measures and practices, as necessary, when the regulatory authority determines that the application of fugitive dust control measures listed in Paragraph (b) is inadequate. Under this regulatory scheme, additional measures beyond those listed in Section 816.95(b) may be required, even though all measures in Section 816.95(b) have not been implemented. The monitoring program, if required, should be designed to identify the effectiveness of existing fugitive dust control measures and the need for additional control measures under this section of the regulations.

Some commenters suggested that the monitoring requirement should be deleted from the regulations and left to EPA. Other commenters suggested that monitoring should be mandatory at all sites, be they Eastern or Western, surface or underground. According to such commenters, monitoring is necessary to verify and assure maintenance of air pollution control requirements. Commenters added that the Office should have more detailed monitoring regulations specifying the required data and methodology.

Under the final regulations, monitoring becomes the central tool to judge the efficiency of the regulatory authority's approved fugitive dust control program. An adequate monitoring program will not only signal the need for additional measures at the site but also guide the regulatory authority in approving subsequent fugitive dust control plans. A monitoring program is mandatory for all Western surface mining activities that produce more than one million tons of coal per year. This assures that the majority of Western surface mines will be monitored.

The Office appreciates the need for additional guidance regarding the requirements for an adequate monitoring program. In cooperation with EPA, the Office may formulate and release a guidance document to assume: (a) adequate data are collected to evaluate the effectiveness of fugitive dust control measures and (b) state regulatory authorities have sufficient criteria for approval of monitoring programs.

§ 816.97 Protection of fish and wildlife.

The final regulations relative to fish and wildlife have two basic premises: The operator is required to (1) use the best technology currently available (BTCA) to minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values and to enhance those values where practicable (Section 515(b)(24) of the Act), and (2) to restore the land affected to a condition capable of supporting the uses, or higher or better uses, than it was capable of supporting prior to mining (Section 515(b)(2) of the Act). For purposes of this Section, the Office has construed "related environmental values" to include all the elements of the environment upon which fish and wildlife resources depend, including air, water, food sources, cover, and the space they occupy. Collectively, these components of the environment comprise fish and wildlife "habitat."

If disturbances and adverse impact on fish and wildlife are to be minimized, and the land capabilities to support fish and wildlife restored, then premining assessments and conditions must be established. This will be accomplished through documentation resulting from the fish and wildlife information (studies) required by Section 779.20 and the fish and wildlife plan required by Section 780.16. The preamble discussions supporting Sections 779.20 and 780.16 are incorporated herein by reference. Section 816.97 addresses how fish and wildlife must be protected during mining and reclamation. Authority for this Section is found in Sections 102, 201, 501, 503, 504, and 515 of the Act; the Endangered Species Act (16 USC 1531 et seq.); regulations of the U.S. Fish and Wildlife Service under that Act; Conservation Programs on Public Lands (16 USC 670 g, h); the Bald Eagle Act (16 USC 688 et seq.); and the Migratory Bird Treaty Act (16 USC 703 et seq.).

The following literature was used in adopting this Section:

(1) *Environmental Criteria for Electric Transmission Systems (USDI, USDA, (1970).*

(2) *"Power Contacts by Eagles and Other Large Birds," REA Bulletin 60-10.*

(3) *"An Environmental guide to Western Surface Mining, Part II: Impact, Mitigation and Monitoring," Moore, Russell and Mills, Thomas (1977).*

(4) *"Methods of Assessment and Prediction of Universal Mining Impacts on Aquatic Communities." U.S. Fish and Wildlife Service, Mason, W. T., Jr. (1977).*

(5) Spaulding, W. M., Jr., and Ogden, R. D., 1968, *Effects of Surface Mining on the Fish and Wildlife Resources of the United States.* U.S. Fish and Wildlife Service, Pub. 58, 51 pp.

1. A few commenters registered support for the entire Section and one requested that it not be changed except for editorial changes. The Office considered these comments but decided against leaving the Section as proposed, in order to accommodate other commenters and improve the regulations. Commenters suggested that since the phrase "important fauna species" was not defined in the regulations, the term probably goes beyond the intent of the Act and should be changed. The Office agrees that "fauna" probably is too comprehensive to be consistent with the Act which uses the term "fish and wildlife." The regulations are changed accordingly.

Similarly, in the interest of consistency and simplicity, the term "flora" has been replaced with "plants" and "vegetation." In the context of the regulations, reference to vegetation normally means the higher forms of plants. It would not generally include lesser forms which do not provide cover or forage for wildlife, or contribute to erosion control, except those lesser plants which are threatened or endangered or are an essential component of a habitat critical to the survival of a threatened or endangered species.

A State conservation department stated that those agencies should determine the "best technology currently available" (BTCA). The Office has responded, by incorporating into Sections 779.20 and 780.16 a requirement that the regulatory authority consult with the State fish and wildlife agency in developing fish and wildlife resource information and plans. Section 786.17(a) further strengthens the fish and wildlife agency role by affording a

review of the adequacy of the applicants' fish and wildlife plan.

2. A commenter questioned the authority of the Office to protect golden eagles; one requested the entire Section be deleted, and another requested that only nests, not the eagle, be reported by the operator to the regulatory authority. Golden eagles are protected by the Bald Eagle Protection Act, as amended, (16 USC 668–668c). Eagles, as well as nests, must be reported, because eagles nesting off the mine site could be dependent upon a food source on the mine site and, thus, be adversely impacted by the mining operations. The reporting provision enables the regulatory authority to assure compliance with the Bald Eagle Protection Act. See sections 201, 515(6)(24), 702 of the Act.

3. Commenters expressed major concern that the proposed regulations covering transmission lines and facilities were too broad, thereby including facilities over which operators have no control. The Office has changed the language of the rule, to limit the regulation to "lines and facilities used for or incidental to surface mining activities."

Commenters said that telephone lines should be deleted from this Section since they pose no electrical hazard. It is true that, while some birds are killed or injured in collisions with telephone lines, electrocution is the primary threat to birds (Moore and Mills, 1977 p. III–114). Thus, the Office has deleted telephone lines from the Section. Still other commenters said the specific guidelines sources for construction of transmission lines were applicable only to the Western United States and recommended that the provision be deleted; or not apply to the East. The eagles, hawks and other large birds the regulations are designed to protect occur nationwide; thus the protection is needed wherever transmission lines occur. The Office has reexamined the documents and determined that while most of the documents originated in the West, their application has no geographic boundaries. Thus, the alternative to delete the Section was rejected.

4. Most commenters said the fencing requirements, as well as the prohibition on new barriers, were unnecessary. The Office maintains that fencing may reduce the adverse impacts on migrating wildlife, by steering wildlife away from hazardous road traffic and into safer passage lanes. Furthermore, new barriers should not interfere with traditional migration routes (Moore and Mills, 1977, p. III–113; Spaudling and Ogden, 1968, p. 12). The regulation, nonetheless, provides broad latitude for the regulatory authority to make the determination on a case-by-case basis. The Office rejected the alternative to delete the fencing requirement.

5. Commenters objected to the provisions requiring fencing to exclude "fauna" from ponds containing toxic-forming materials. Deletion of the Section was considered and rejected, because toxic substances are hazardous to wildlife. (Moore and Mills, 1977, p. III–112, 136; Spaudling and Ogden, 1968, pp. 13–140). "Fauna" was changed to "wildlife," thus accommodating the commenter's concern. The intent of the regulation is to exclude the higher forms of wildlife, such as deer. Moreover, the regulation specifies ponds containing "hazardous concentrations" of toxic-forming materials. Thus, not all ponds would require fencing. Sections 515(b) (10) and (24) of the Act provides ample authority to require this technology to minimize adverse impacts on wildlife.

6. Commenters suggested adding language to this Section to require enhancement "where practicable." The Office agreed with the suggestion, which makes the regulation consistent with the language of the Act.

7. With reference to Section 780.16, a commenter suggested that the term "unique" was not a proper modifier of habitat, in that unique essentially means "one of a kind." The Office has determined that the original use of the word "unique" was meant to connote habitats that have "unusually high" value for fish and wildlife. Recognizing that this is a subjective term, the Office is relying on the consultation process between the regulatory authority and the appropriate fish and wildlife agencies to establish, on a case-by-case basis, what is an "unusually high" value for fish and wildlife. Accordingly, the Office accepts the recommendation and has changed the term "unique," to "unusually high" in this Section, and wherever it applies in fish and wildlife related Sections.

8. A commenter suggested the words "where practicable" be added after "enhance" relative to riparian vegetation on the banks of streams, lakes, and other wetlands areas. In one given riparian zone, it may be entirely "practicable" to require an operator to plant additional vegetation to enhance soil stabilization; while in another it may be impractical. Decisions will have to be made by the regulatory authority on a case-by-case basis. The Office agrees that this change brings the regulation more in line with the language of the Act.

9. Commenters expressed concern about the loss of aquatic habitats, in general, and intermittent streams, in particular, maintaining that the deep pools of intermittent streams support diverse populations of vertebrate and invertebrate organisms which would be lost if the streams are not restored. Suggestions were made that the regulations require streams to be restored to an environmentally-acceptable gradient and that fish and wildlife habitat be restored. Other comments which expressed similar concerns for perennial streams recommended that Section 816.97(d)(7) of the proposed regulations be deleted, and specific requirements for avoidance or restoration of both intermittent and perennial streams be addressed in the hydrology sections (Sections 816.44 and 816.57). The Office agrees and the changes have been made in the permanent regulations. This Section and Sections 816.44 and 816.57 afford strong protection for streams and their aquatic communities.

10. Section 816.97(d)(7) of the proposed regulations was deleted pursuant to the rational presented for Section 816.97(d)(6) above.

11. The proposed regulations (former Section 816.97(d)(8) contained a provision which would require operators to advise their permanent and contractual personnel of laws pertaining to fish and wildlife. Commenters objected to that requirement. Most felt it was not founded in the Act, was unreasonable, and placed an inordinate responsibility on operators. The Office essentially agrees. Mine operators may be responsible for illegal actions of their employees, but each individual is responsible for knowing and abiding by all laws. The Office has deleted the requirement from the final regulations.

12. Commenters wanted some relief from the proposed regulations (former Section 816.97(d)(9)) which prohibited the use of persistent pesticides. Some wanted a definition of "persistent pesticide", while others feared that the regulatory authority may use the persistent pesticide ban to prohibit the use of any chemical control agents. The Office believes that the regulatory authority should set rigid standards for the use of any potentially harmful chemicals. However, the Office also recognizes that, under certain circumstances, it may be proper to use persistent pesticides. Examples which may warrant use of persistent chemicals might be for the control on the mine site of rabid bats or sylvatic plague-carrying ground squirrels which pose threats to human health; or control of noxious plants which threaten to suppress desired vegetation stabilizing steep slopes. Accordingly, the Office has changed the regulation to allow the regulatory authority to approve the use of persistent pesticides. However, only compounds registered or cleared by the Environmental Protection Agency under the provisions of the Federal Insecticide, Fungicide and Rodenticide Act as amended, may be approved.

13. Commenters wanted changes in regulations to allow the use of fire as a forest or range-management tool. Since the purpose of the proposed regulations was to control wildfire, the Office sees no inconsistency by permitting controlled burning. The Office recognizes that foresters, biologists, and range managers do use fire as a management tool, and foresees uses of controlled or prescribed burning on mine reclamation areas to control unwanted vegetation and to reduce competition for desired plant species. Accordingly, the Office has changed the regulation to permit the regulatory authority to approve controlled burning as a part of the management plan.

14. A commenter desired clarification of the language regarding vegetation. In particular, the commenter said plants used on reclaimed areas need only provide food or cover for fish and wildlife, not both. The Office agrees that clarification is needed. The Office's intention in that regulation is that a plan be useful as a source of the food or cover—*not necessarily both.*

15. Another commenter requested that "where practicable" be inserted before "enhance" in Section 816.97(d)(11)(i)(C) of the proposed regulations. The Office has construed the successful revegetation of any plan approved by the regulatory authority as food or cover for wildlife to be an enhancement of the wildlife habitat. Therefore, the use of "where practicable" is not applicable here.

16. A commenter suggested that, in rocky, semi-arid areas, the placement of large rocks on the surface in areas of anticipated excessive runoff to control erosion and improve cover for wildlife should be allowed. The Office rejected this on the basis of determination that it conflicts with the provisions of Section 515(b)(3) of the Act.

17. Some commenters were concerned about the desirability of exotic plant species for wildlife. Those concerns are accomodated by language in Section 816.112 which requires that exotic plant species will have been field-tested and proven to have desired qualities, and that they be compatible with the plant and animal species already established in the area. This provision should prohibit the use of plants poisonous to wildlife or which smother or otherwise outcompete desirable plant species.

18. Concerning enhancement of row crops for wildlife, by requiring that fields be surrounded with wildlife habitat, most commenters questioned the Office's authority to require a landowner to enhance land for wildlife, especially when the proposed postmining land use is to be agriculture. Moreover, it was pointed out that in some precipitation ranges, the proposed rule would require row crops which would not be appropriate. This, in effect, would have forced the landowner to reduce crop production. The Office agreed with these arguments and has changed the regulation to require enhancement for wildlife only on croplands farmed on lands diverted from premining wildlife habitat. The Office believes that requirement to be consistent with the intent of Section 515(b)(24) of the Act.

19. A commenter urged the Office to retain the strong protection afforded wetlands. Provisions relative to wetlands were maintained as proposed.

20. A commenter suggested that the proposed rule's requirement for greenbelts on lands where the primary use was to be residential, public service or industrial, be modified, to take into account the size of the mined area and surrounding conditions. The Office agreed that this suggestion has merit. For example, a greenbelt would not be compatible with an airport, since wildlife attracted to the greenbelt might collide with aircraft posing a threat to human life. The Office has modified the final rule, to allow omission of greenbelts, where they are inconsistent with the approved postmining land uses.

21. Another commenter recommended a provision requiring a fish and wildlife monitoring program. The Office accomodated this concern by including monitoring provisions in the fish and wildlife plan requirements. The Office assumes that the required fish and wildlife plan will be adequate to ensure that specific populations of species covered by the plan are not reduced, inhibited, or endangered by conditions attributable to mining or reclamation operations. Moreover, the consultation process affords opportunities for fish and wildlife agencies to stay abreast of all mining activities in their respective purview and to initiate whatever monitoring programs they think appropriate.

§ 816.99 Slides and other damage.

This Section establishes requirements necessary to prevent damage caused by slides and erosion. It further specifies those steps that must be taken any time a slide occurs which may have a potential adverse affect on life, property, health, safety, or the environment in or near the permit area. The authority for these provisions is found in the Act in Sections 102, 201, 501, 503, 504, and 515 of the Act. Literature used in the preparation of this Section included Grim, E. C., and Hill, R. D. 1974, Environmental Protection in the Surface Mining of Coal, USEPA Report EPA-670/2-74-093.

1. Some commenters requested that barriers be provided, based on site-specific geotechnical field investigations, with methods other than barriers authorized if they provide equal or better protection. Section 515(b)(25) of the Act requires maintenance of an undisturbed natural barrier to prevent slides and erosion. No specific suggested alternatives were presented. The Office could not allow for alternatives, without substantial technical support. The Office feels geotechnical investigations are required, where stability of the natural undisturbed barrier may not assure positive stability against movement.

2. Some commenters requested exemptions, where no outcrop would be encountered such as an area mine, or a previously contour-mined area. The Office recognizes that danger from slides outside the permit area, in these cases, is probably non-existent. The unavailability of a natural undisturbed barrier should not result in such areas being precluded from mining.

3. A comment on Paragraph (b) requested the proposed language be changed, to include notifying the Office if a slide occurred that would be potentially damaging outside the permit area. Paragraph (b) provides that, if a slide occurs which may effect public health, safety, or the environment, the regulatory authority must be notified. The Office feels this is sufficient to meet the comment and has made no change.

§ 816.100 Contemporaneous reclamation.

This Section sets forth requirements applicable to all phases of reclamation activity. Authority for this Section is found in the Act in Sections 102, 201, 501, 503, 504, 507, 508, 509, 510, and 515. Reclamation efforts, including, but not limited to, basic filling and grading, topsoil replacement, and revegetation of all land that is disturbed by surface mining activities must occur as contemporaneously as practicable with mining activities.

The Office considered an alternative approach of attempting to quantify the term "contemporaneously", for all activities and to enumerate maximum delay periods after which, if an activity has not been undertaken, this standard would be breached. This alternative approach was rejected, in favor of general language. The alternative selected should allow the regulatory authority the necessary flexibility to approve mine plans with varying reclamation timetables, based on specific site conditions. No major issues were raised by comments regarding the proposed language of this Section.

§ 816.101–816.105 Backfilling and Grading.

Sections 816.101–816.105 are regulations for backfilling and grading of areas disturbed by surface coal mining operations. Disturbed areas are to be reshaped to approximate original con-

tour, in a manner that minimizes erosion and water pollution and prevents slides. A level of surface productivity equal to that attained prior to mining and under proper management is to be achieved on the restored area. Authority for these Sections is Sections 102, 201, 501, 503, 504, 506–510, and 515 of the Act.

Literature used in writing these Sections is included in the foregoing Sections of this preamble relating to: disposal of excess spoil (Section 816.71–816.74.); topsoil (Sections 816.21–816.25); hydrologic balance (Sections 816.41–816.57), and regulations from States regulating surface mining (Illinois, Kansas, Kentucky, Missouri, Montana, Ohio, Pennsylvania, Tennessee, West Virginia and Wyoming).

The contemporaneous backfilling and grading regulations are minimum standards, based on State regulations, which are reasonable and valid for contour mining, open pit mining, and area strip mining. This Section satisfies Section 515(b)(3) of the Act and will insure the prompt restoration of the disturbed lands to minimize additional damage to the environment and to return the land to a productive use.

Commenters stated that the timing and distance requirements for backfilling and grading (Sections 816.101(a)(1)) in contour mining should be changed. The following alternatives were considered:

(a) Change the wording of the Section to read: "Rough backfilling and grading shall follow coal removal by not more than 60 days or 1200 linear feet."

(b) Retain the proposed wording the regulation.

(c) Leave the matter to the discretion of regulatory authority.

(d) Change the distance requirement to 1500 linear feet.

(e) Shorten the time period from 60 days to 30 days.

The Office chose to retain the 60 day time limit for backfilling and grading on contour mining operations and to increase the linear distance to 1500 feet, to provide additional work space for haulage ramp construction and other mining operations. The timeframe is more stringent than the timeframes set by the regulations of several States (i.e., Kansas, Montana, Ohio, Pennsylvania, and Tennessee) and less stringent than several others (i.e., Illinois, Kentucky, and Missouri).

It was argued by some that the time requirement should be reduced to 15 days following coal recovery or 45 days following land disturbance. These stipulations were identical to the existing requirements of Kentucky. The Office rejected these comments because it was believed that safety in the mine area would be jeopardized by requiring backfilling and grading within a few hundred feet of the coal removal operation. The requirement also would impair coal recovery from certain coal deposits such as pitching seams or thick overburden. Since no spoil can be placed on the outslope, many operations will be depositing spoil as close as possible to the coal removal phase in order to minimize spoil haulage distances. The additional flexibility also is reasonable to handle unexpected delays due to weather or equipment failure. The Office believes this time period to be a reasonably prescribed time limit for reshaping the area, giving full consideration to weather conditions, while at the same time minimizing environmental degradation.

The size of the ungraded area for contour mining would be restricted by the 1500 linear foot requirement. Several commenters argued convincingly that severe operational constraints would be levied on the operator by the proposed 1000 linear foot requirement. With this restriction, safety in the pit would be sacrificed, because drilling, overburden and coal removal, construction of haul roads and regrading operations would be confined to this restricted, high-intensity work area. It also was stated that the original 1000 linear foot requirement would adversely impact the quantity of coal uncovered at any one time. Should a major piece of overburden handling equipment breakdown, operators would be unable to meet their contract requirements. The final regulation is similar to Kentucky and West Virginia regulations and exceeds the distance requirements set in Wyoming regulations. The standard is necessary and reasonable to minimize water degradation and expedite rehabilitation of the disturbed area, while also giving consideration to operational logistics. The regulatory authority may grant additional time for rough backfilling and grading on contour operations, if the permittee can demonstrate through a written analysis that additional time is needed.

2. OSM believes that incremental cuts for open pit mining (Section 816.101(a)(2)), in areas of thin overburden, create site-specific problems both with environmental protection and coal-removal operational constraints, when a time frame for rough backfilling and grading is rigidly defined. The regulatory authority, when approving a time schedule as specified in the regulations, needs to be specifically mindful of the environmental significance of the schedule, as well as the operational need of the mining activities. No issues were raised regarding this regulation.

3. Commenters stated that the timing and distance requirements for area surface mining (Section 816.101(a)(3) of the proposed regulations) were too stringent. According to commenters, during extremely cold weather, area strip mines in northern States can have frozen spoil ridges. Snow and ice in troughs, if covered, later thaw and produce an undulated surface where the previously frozen material settled. Additional delays may result from adverse geologic and climatic conditions in any area mining region.

The following alternatives were considered:

(a) Require backfilling and grading within two spoil ridges.

(b) Retain the language of proposed Section 816.101(a)(3) which required, backfilling and grading within 90 days following coal removal and limit the number of spoil ridges to four.

(c) Increase the time allowance.

(d) Allow exceptions by the regulatory authority, based on written analyses submitted by the permittee.

The intent of the Act is to compel reclamation as "contemporaneously as practicable (Section 515(b)(16)), "and . . . as possible" (Section 102(e)). It is necessary to establish a maximum time limit for backfilling and grading, to insure that toxic-forming material in the spoil will not remain exposed to surface runoff over an indefinite period of time.

One comment suggested backfilling and grading be required within two spoil ridges of the active operation. It was their concern that the four-spoil ridge requirement of the proposed regulations did not encourage sufficiently contemporaneous reclamation. This comment was rejected, because of climatological and operational problems.

In order to prevent the harmful environmental consequences noted above, the Office has decided that the time span for rough backfilling and grading be increased to 180 days, because of the regrading and surface stability problems encountered during adverse weather conditions in many Western and Central state regions. The Office further believes that additional latitude is necessary to permit certain pit configurations to be operated under particular constraints, such as type of equipment utilized and general boundaries of permit and outcrop areas. (Final EIS, 1979, pp. BII–41–56). The regulatory authority may allow additional time, if the permittee can show, through detailed analysis, that time limitations are too restrictive because of weather and local soil conditions. In no case shall backfilling and grading be delayed longer than required by existing State standards.

In addition, the requirement that the maximum number of spoil ridges be limited to four will insure that large area mines will be reclaimed in a manner that limits the disturbances of

the hydrologic balance, as required by Section 515(b)(10) of the Act. For unusual mining or weather conditions, the regulatory authority may grant additional time for backfilling and grading, if the permittee can demonstrate that it is necessary.

4. Section 816.101(b) sets forth the requirements for backfilling and grading of the disturbed areas. Paragraph (b)(1) states that lands must be backfilled and graded to approximate original contour, except for exemptions for steep-slope mining and mountaintop removal. The operator is required to insure stability and to prevent leaching of toxic-forming materials by transporting the spoil and compacting as required. All highwalls, spoil piles, and depressions must be eliminated.

5. Several commenters objected to the use of the term "haul or convey", when referring to the placement of spoil in the general backfilling process. The Office chose to modify the language in Section 816.101(b)(1) to "transport," because spoil is most often backfilled and graded using dozers and the words "haul or convey" does not logically define the work effort of dozers. (Grim and Hill, 1974, p. 88). The Office does not believe that this proposed use of this word to be contrary to Congressional intent. The intent of the change was to allow return of spoil into the mined areas.

6. Several commenters suggested the insertion of an additional Section which would permit the placement of the box cut spoil on unmined areas adjacent to the box cut. The spoil would be graded to blend into the surrounding terrain. Most dragline and overburden shovel operations in the Western and Central States "side-cast" the box cut spoil. Depending upon particular State regulations, the topsoil may be removed prior to spoil placement. Within the required time or operating restrictions, the spoil is graded to blend in with the spoil from the second panel cut and the surrounding terrain. It was argued that this practice should be continued.

The Office identifies two distinct concerns with this practice. First, the box cut spoil is cast in a manner which requires the disturbance of lands outside the mine pit area. By definition, this box cut spoil must then be classified as excess spoil, since they are not returned to the pit area. Because the spoil is dropped from the bucket of a dragline or shovel, there are no provisions for underdrains, nor is the material placed in layers and compacted as required by the disposal of excess spoil provisions set forth in 30 CFR 816.71-74. However, "stabilization and protection of all surface areas including spoil piles to effectively control erosion and attendant air and water pollution" is required by Section 515(b)(4) of the Act. The second problem is that, because of the progression of this type of mining, there is not spoil available to reclaim the final cut as specified by 30 CFR 816.101. The highwall must, however, be covered and the disturbed lands returned to the approximate original contour, in accordance with Section 515(b)(3) of the Act.

The Office chose to retain the proposed language of Section 816.101(b)(1), in order to conform to the language of Section 515(b)(3) of the Act that provides that all spoil shall be "graded to eliminate all highwalls, spoil piles and depressions."

The Office recognized these unique situations during the interim program at page 62643, *Federal Register*, December 13, 1977.

> "Box cut spoils should be limited in amount and in land area affected and should be graded to blend into the surrounding terrain. The concept of approximate original contour allows return of all spoil to a mined area even when the result is a higher elevation that blends with the surrounding terrain."

The interim program further sets forth at the same page as above, four provisions which must be satisfied, if special treatment of box cut spoils were permissible: (1) it conforms to other requirements, such as topsoil removal and grading of the mined area to approximate original contour; (2) the box cut spoils also are graded to approximate original contour or to the lowest practicable grade; (3) the reclamation achieves an ecologically sound land use compatible with the surrounding region; and (4) other provisions pertaining to spoil handling in all types of mines are met.

The Office recognizes that provision (4) cannot be satisfied by these operations if the excess spoil requirements are enforced. The Office believes that the regulatory authority should have the discretion to establish the final provisions for the disposal of box cut spoil with the above four requirements as the minimum standard. In addition, the Office believes that additional provisions must be stipulated to insure that this exception is not misinterpreted in applications to: (1) any excess spoil, including box cut spoil, which is deposited on lands satisfies the slope angles specified in the (30 CFR 701.5) definitions for head-of-hollow and valley fills must be deposited in accordance with all requirements set forth in 30 CFR 816.71-74; and (2) the stockpiling and transportation of box cut spoil to the final cut is encouraged in order that the requirements of 30 CFR 816.101(b)(1) for the elimination of highwalls, spoil piles, and depressions are satisfied.

The Act and the legislative history indicate that no highwalls are to be left after mining is completed. The elimination of all highwalls and attainment of approximate original contour (or lowest practicable grade in areas of thin overburden) is mandated by Section 515(b)(3) of the Act. The steep slope variances granted in Section 515(c) and those of Section 515(e) do not exempt operators from the requirement of eliminating the highwall.

7. Paragraph 816.101(b)(2) requires that on-site and off-site effects on the hydrologic balance be minimized and support the approved postmining land use. The land slope need not be uniform under Paragraph 816.101(b)(3), but can vary, dependent upon the post mining land use needs. Cut-and-fill terraces are permitted under Paragraph 816.101(b)(4), if the requirement of 30 CFR 816.102(b)(1)-(2)-(3) are complied with.

8. The regulations require that the reclaimed areas must be graded to slopes equal to or less than "approximate pre-mining slopes," which would be those slopes determined by the regulatory authority to be stable slopes that provide a land surface capable of supporting the approved postmining land-use. The term "approximate premining slopes" is meant to indicate that such slopes must be selected according to the following criteria:

(1) They would not appreciably exceed the maximum slopes measured for the premining surface.

(2) They could be less steep than the natural slopes, by that amount necessary to prevent slides, erosion, and water pollution, to provide adequate drainage, to cover all acid-forming and other toxic materials, and to permit revegetation.

The "final graded slope," measured after mining and grading, would not necessarily be a uniform slope, but is often an overall average slope. Therefore, terraces, roads, and diversion ditches could be included within the slope measurement path, if the overall final graded slope meets the criteria set out above. Long, uniform, uninterrupted slopes are not generally desirable, since they tend to erode more readily than do rolling, nonuniform slopes.

9. In order to promote the reclamation of previously mined areas which have been inadequately reclaimed and where much of the previous spoil and waste had been deposited so as to leave insufficient material for grading to approximate original contour, the regulations give discretion to the regulatory authority to modify requirements of Section 816.101(b). These regulations are intended to encourage an improvement in land quality and perhaps water quality, through current mining and reclamation of lands

poorly reclaimed by previous mining in accordance with one of the purposes of the Act (Section 102(h)). Some previously mined areas lack sufficient available spoil or topsoil to achieve postmining conditions which meet all the land configuration and revegetative requirements. Reclamation activities for such operations are required to meet the minimum standards for backfilling and grading, including retention of overburden and spoil material on the bench and grading to completely eliminate the highwall and maintain a stable slope.

10. The regulations in Section 816.102(a) reflect the fact that premining slope measurements are required to take into account natural variations in slopes. In many cases it would be appropriate for the permittee to develop accurate topographic maps for an area prior to any mining and to develop an overlay of the proposed postmining topography where that topography blends in with the surrounding terrain, reestablishes the surface drainage system, and serves the approved postmining landuse. Then the final graded slopes would be specifically defined on the approved postmining topographic contour maps, where they may be reviewed as a whole.

The use of topographic maps, aerial photography, and other photogrammetric methods of measuring premining and postmining slopes is appropriate only when topographic maps and photographically-produced maps are of sufficient accuracy to ensure adequate measurements. Thus, while maps and photographs might be used in addition to, or in place of field measurements, the maps and photographs must be established by the permittee as accurate. Commonly-used professional engineering practices are suitable for slope measurements, and surveys could still be required by the regulatory authority.

11. It was suggested that additional language be inserted into 30 CFR 816.102(a) to permit restoration of box cut spoils to blend in with the surrounding terrain, even though the elevation of the regraded surface may be higher than the original land surface. The Office maintains its position discussed on this same subject of treatment of box cut spoil under 30 CFR 816.101(a).

12. Comments were received which addressed problems arising from backfilling and regrading in areas which were previously surface mined or augered and sufficient spoil is not available to achieve approximate original contour. The Act in Section 515(b)(3) is clear in that the highwall shall be eliminated following any surface mining activity conducted after the date of August 3, 1977. Therefore, the Office retained the language in 30 CFR 816.102(a)(2) as proposed on September 18, 1978.

13. Section 816.102(b) provides for cut-and-fill terraces as part of the postmining land configuration. Improved erosion control through construction of stable terraces will reduce the erosive action of water flowing across long, uninterrupted slopes which are not fully protected by a permanent vegetative cover (Curtis, 1971, p. 198–99; Curtis and Superfesky, 1977 p. 156; and Packe, 1965, figure 1). Properly designed terraces will encourage stability within the backfilled spoil. Improved soil moisture and revegetation should be achieved through the creation of small depressions.

14. Commenters suggested that Section 816.102(a) be modified to require a factor of safety of 1.3 only when the slope exceeded lv:2n (50 percent). Commenters suggested the need for compatibility between this Section and Section 816.102(b)(3) which discusses terrace slopes. The Office has rejected these comments for several reasons.

First, 30 CFR 816.102(b)(3) addresses the outslope for a terrace which will only be permitted with approval of the regulatory authority under the stipulation that the operator has provided adequate design provision for assured stability and the requirements in 30 CFR 816.102(b) are satisfied. It is OSM's intention that permission for leaving terraces will be an exception and not the general rule.

Secondly, to permit recommended slopes as proposed would violate the intent of Section 515(d) of the Act which establishes the slope requirements for steep slope mining. The rationale for requiring a static factor of safety of 1.3 for steep slopes is found in the Preamble discussion for 30 CFR 826.12(b) and 30 CFR 826.15(a). The Office further believes that the safety of backfilled spoil is dependent upon the overburden stratigraphy, that is, overburden composed predominately of shale or other materials highly susceptible to weathering and disintregration is subject to erosion or failure. A discussion of the stability problems inherent in disposal of shaly spoil is found in the Preamble for 30 CFR 816.74.

Finally, the Office has taken the position that compacted spoil layers and prescribed slope angles will not assure slope stability. Other influences such as foundation conditions and presence of water must also be taken into account. The commenters provided no technical data to support their recommendation.

15. Commenters recommended that OSM relax the requirements for stability and return to approximate original contour in Section 816.102(a). They contended that the heterogeneous nature of overburden made the analysis and safety design very expensive. The Office recognizes that analysis may be necessary to permit backfilling and grading operations to achieve the required slope stability. OSM has interpreted Section 515(b)(3), (4), (21), and (23) and 515(d) of the Act to mean that Congress intended that spoil instability problems characteristic of past mining activities be brought under control. In addition, the remainder of the Preamble for Section 816.102 discusses comments and rationale analogous to this comment and the reader is referred to those comment responses. The Office made no additional change as a result of these recommendations.

16. One comment was received which stated that an increased accident rate and equipment damage was incurred with the implementation requirements in 30 CFR 816.102(a) on steep slopes. The commenter offered no specific recommendation as to what action the Office should take. Operators may have to implement additional safety measures to assure that such damage and accidents do not occur. The Office has made no change to the regulations in response to the comment.

17. It was suggested by one commenter that portions of the highwall should be retained to provide habitat for raptors and other wildlife. This comment is rejected as being contrary to the congressional intent in Section 515(b)(3) of the Act. For additional discussion, the commenter is referred to the Preamble addressing 30 CFR 816.97.

18. One comment recommended that the Office should uniformly enforce the elimination of highwalls and allow for no administrative exemption to the permanent regulations. The Office did not intend to provide an exemption to highwall elimination for construction of a drainage facility, thus allowing a partially exposed highwall. The drainage facility must comply with 30 CFR 816.102(b)(3), which states that the construction of terraces may only be permitted if the highwall is eliminated.

19. Several commenters objected to limiting terrace width on backfilled areas. The Office chose to retain the proposed language of Section 816.102(b)(1), because the discussion of approximate original contour supports the use of terraces (Davidson, 1974, p. 198) so long as the terrace is not used as an inappropriate substitute for construction of lower grades.

The need to restrict terraces to those situations where breaks in the terrain are truly necessary must be emphasized (Coalgate et. al, 1973, Fig. 16, p. 91). The Office believes that smaller diversion ditches are often more suitable than terraces for the control of water flow across graded

slopes. Terraces are often viewed by industry as a means of access rather than for temporary control of erosion. Further, the terraces discussed in the regulations are those to be left after mining and regrading are completed. The Office does not intend that terraces be used as a means of constructing road access, unless approved in the postmining land use plan. It is the intent of this Section to require that disturbed watersheds be reclaimed to approximate original contour. The Act looks to the drainage pattern of the area and the general surface configuration, and indicates that the reclaimed area and any terraces used must conform to these criteria. Proposed terraces should have a well-defined role in supporting the approved postmining landuse. The common practice of constructing small diversion ditches in the form of terraces on moderate slopes as an erosion control measure would not be precluded by these regulations, but such terraces should not lead to increased access to the area.

The purpose of the dimensional limits on terraces. (Section 816.102(b)(2) is to create land forms that support postmining land uses and provide erosion stability. Terraces often are used on valley fills and head-of-hollow fills to break-up otherwise uninterrupted slopes. Nonetheless, terraces and other types of fills addressed in this Section must be reviewed for suitability by the regulatory authority and must be constructed in a manner compatible with the postmining land use.

20. Several commenters objected to the requirement of Section 816.102(b)(3) that backfilled slopes have a 1.3 static factor of safety. The Office considered several alternative measurements of slope stability and chose to retain the 1.3 measure because this factor is a commonly-accepted measure of safety. The static safety factor of 1.3 is based on the fact that failure of a section of land returned to its approximate original contour would result in some environmental damage, however, the damage usually would not be as extensive or significant as the damage from the failure of an excess spoil disposal fill. Regulatory authorities may specify higher safety factors when necessary, and permittees will then be responsible for design and construction calculations would be based on commonly accepted professional engineering practices. If it becomes necessary to specify methods, the Office would do so under these regulations.

21. Commenters objected to Section 816.103(a)(1) which required the covering of coal seams and any acid-forming or toxic-forming materials with 4 feet of material which may not be available. It was contended by some that research results (Brundage, 1974, p. 184–185) indicated that formation of acid from a restored refuse pile was reduced up to 91 percent with a cover of 1 foot, 2 feet or 3 feet, with no significant variance regardless of cover depth. Coal refuse banks are but one source of acid-forming or toxic-forming material and are separately treated in Sections 816.81–88. Section 816.103 is directed to the covering of undesirable material uncovered during the overburden handling operation, as well as the exposed highwall and coal seam. The Office does not believe that such large quantities of these materials exist that sufficient spoil is not available in the pit area to adequately cover the toxic material to enable proper reclamation and prevent water degradation. Coal refuse piles are concentrated accumulations of coal impurities and other reject material which can generate large quantities of acid water and can be ignited by spontaneous combustion or improperly deposited domestic and other wastes. Proper safeguards are essential to provide protection from the adverse environmental problems associated with these wastes.

Reviews of State requirements indicate that 4 feet is usually considered adequate to cover toxic-forming or acid-forming materials. (Barthaure et. al, 1971, p. 6). The Office believes that the intent of the cover requirements goes beyond the single concern of minimization of acid formation. Sufficient cover for long-term survival of revegetation has been illustrated in research which shows 4 feet to be inadequate to prevent upward migration of salts in semi-arid to arid climates or to protect deep rooting plants which are part of the revegetation plan (Brundage, 1974). A qualifying phrase has been placed in the regulation to address the need for thicker cover, where necessary to guard against salt migration and exposure by erosion and to provide an adequate plant growth substrata. The Office considered allowing greater flexibility for the regulatory authority to determine the amount of cover based on site-specific conditions. The Office chose, however, to retain the 4 foot cover requirement for the foregoing reasons.

22. Commenters suggested that exposed coal seams, such as coal outcrop or coal seams of scientific value, should be exempt from the requirements of Section 816.103(a). In most cases, compliance with backfilling and grading requirements as required under Section 515(b)(3) of the Act would automatically cover exposed coal seams. It is not the intent, however, that outcrop coal always be buried with 4 feet of cover. The permittee should identify those areas which will not be disturbed due to poor quality or will be left as a barrier to control stability and erosion in compliance with Section 515(b)(25) of the Act.

23. One comment suggested that Section 816.103(a)(2) be expanded to include mixing and sandwiching of non-toxic material to neutralize the adverse impact of toxic-forming material. The Office considered these two techniques to be two of any number of methods which may be utilized to handle toxic materials. No change was made in the regulation. Requirements to analyze and treat or bury coal processing waste or coal conversion facility waste are appropriate. It is necessary to ensure that waste disposal in mine areas is handled in a manner that does not adversely affect the hydrologic balance, especially as the balance relates to water quality (Martin, 1974, pp. 28–30). Before waste materials from a coal processing or conversion facility outside the permit area or from other off-site activities such as municipal wastes are used for fill material, it should be demonstrated to the regulatory authority by hydrological means and chemical and physical analysis that the use of these materials will not adversely affect water quality, water flow, and vegetation; will not present hazards to public health and safety; and will not cause instability in the backfilled area.

24. It was suggested that the language of Section 816.103(a)(3) be changed to insure protection against acid seeps from the reclaimed mine pit and other acid-forming materials. Concern was expressed that a blanket cover of 4 feet may not be adequate to prevent the formation of acid water or encourage the support and survival of revegetative efforts. It has been stated that spoil banks reclaimed with the sincerest intention can cause acid water problems. Conditions which lead to formation of acid water include: broken strata beneath the extracted coal seam; percolation of water through loosely placed spoil; seepage through the spoil or waste by naturally occuring seeps and springs in the disposal area; and erosion of cover material with little or no maintenance activities (Gasper, 1976, pp. 2–6). It was further suggested that, in areas known to be major sources of acid-forming or toxic-forming materials, or if overburden analysis identified zones containing critical levels of toxicants (Despard, 1974, p. 4), then additional requirements to insure their isolation should be required (Gaston, 1976, pp. 9–10).

Paragraph (4) requires that adequate safeguards be taken in accordance with Section 515(b)(10)(A)(i) of the Act to protect drainage courses from the threat of water pollution by improper disposal of acid-forming and

toxic-forming material. The Office choose to change the language of the regulation to require the placement of more than 4 feet cover to protect against the formation of acid or toxic seeps and require special compaction and isolation of toxic material from groundwater contact.

25. The intent of Section 816.103(b) is to provide the regulatory authority with a basis for establishing site-specific requirements to assure stability of backfilled materials, selective placement and stability of backfilled material, and selective placement and compaction of backfill material when necessary to prevent erosion and leaching of toxic substances into surface and subsurface water.

26. Several commenters objected to the use of the phrase "hauled and conveyed" since the Act uses the language "transported and placed." The legislative history shows clearly that "standards require controlled placement of spoil and that spoil must be transported—hauled by truck or other vehicle placed and compacted. . . ." (123, Cong. Rec. H-7582 (July 21, 1977)). The Office believed the commentor's request was to allow for end-dumping of spoil is clearly inconsistent with the intent of Congress. For additional discussion on the Office's policy regarding the hauling and placing of spoil the reader is referred to the preamble to 30 CFR 816.71-74 and 30 CFR 816.81-88. The Office further believes that toxic-forming and acid-forming materials cannot be properly isolated and covered with non-toxic spoils unless adequate precautions are exercised at the mine operation. (Dollhopf et. al, 1977, pp. 54-70). The Office has determined that such materials must be hauled and placed to insure protection of water quality and other related environmental values. No change, therefore, has been made to the regulation.

§ 816.104 Thin overburden.

1. One commenter requested that the last sentence of proposed Section 816.104(a) be changed to read "The provisions of this Section apply when compliance with Section 816.101 can be achieved only by disturbance of additional acreage outside the coal extraction area." The rationale was that additional disturbance of large areas needed for borrow would be prevented, thereby resulting in a more realistic and efficient backfill plan. As noted in House Report No. 95-218, 95th Cong., 1st. Sess. at 96 (1977), it was realized that, in some cases, restoration of the original contour was impossible and the useless act of digging a new pit to achieve approximate original contour was unnecessary.

The intent of Section 816.104(a) is to clearly define the limits of when thin overburden is applicable. Thin overburden requirements apply when the final thickness of the swelled overburden is less than 80 percent of the sum of the overburden thickness and coal thickness prior to coal removal, and when surface mining activity can not achieve approximate original contour. It is felt that Section 816.104(a) implies this rationale and does not imply that borrow pits are needed. Therefore, the comment was rejected.

2. A commenter felt that Paragraphs (b)(1) and (b)(2) of the proposed rule were contradictory, with regard to constructing slopes steeper than 2:1 and maintaining a factor of safety at 1.3. The Office intends for the slopes to be graded to ensure stability, so as to protect against adverse environmental impacts due to slope failure, and to protect the health and safety of public and private property. Since slope failure would occur into the existing pit, the Office believes that severe damage would not occur as a result of a slope failure. Therefore, since the hazard rating appears to be low, a 1.3 static safety factor was chosen (MESA, 1973, pp. 5.142-5.144; Canadian Department of Energy, 1977, pp. 79-80). Even though this static safety factor was chosen as a design criteria, the Office maintains that slope stability rather than a design criteria must be ensured.

The commenter argued that slopes steeper than two to one can be constructed and still maintain a factor of safety of 1.3. The Office realizes that this is confirmed by Lambe, 1969 (Soil Mechanics, p. 193). However, House Report 95-218 (p. 105) states that, in thin overburden, the regrading standard requires that the overburden be used to cover the floor of the mining operation, to provide some drainage control, and to establish a slope of at least the angle of repose against the highwalls, completely covering the coal seam and extending to the original contour. An angle of repose fill against the highwall provides a surface which may be more stable than the highwall with respect to weather. In addition, the slope of natural repose has an added safety value, since it does not present a hazard to either wildlife or human life, as would a vertical face. In various materials the angle of repose varies greatly; i.e., 1v:2h to 1v to 1.4h (Lambe, 1969, Soil Mechanics, p. 149). From the legislative history and the Office's interpretation, 1v to 2h was chosen to reflect minimal environmental impact and protection of health and safety of public and private property. As shown through years of experience by the U.S. Soil Conservation Service, designed slopes of at least 1v to 2h provide the best conditions for fill slope stabilization. The Bureau of Reclamation also has set embankment slopes at not less than 1v to 2h (USDI Bureau of Reclamation, 1960, Design of Small Dams., p. 196). From this data, slopes of greater than 1v to 2h could not be accepted because of the increased risk of erosion and difficulty in revegetation even though the 1.3 static safety factor can be maintained.

Another commenter suggested deletion of the slope requirement to require that the fill slope meet only the requirement of the 1.3 static safety factor. As stated previously, the intent of the slope requirement is to minimize soil erosion and promote slope stabilization, whereas the static safety factor is to ensure slope stability from failure through proper design. Therefore, the comment was rejected.

3. A commenter suggested that, instead of the 1v:2h slope requirements in Section 816.104(b)(2), the slopes should be near their angle of repose. The commenter pointed out that flat slopes tend to reduce useable cropland and create severe erosion problems. The Office agrees that either a too steep or too flat slope will increase the severity of erosion. Therefore, the 1v:2h slope was chosen since it has been accepted by the Soil Conservation Service and the Bureau of Reclamation as a minimum standard to ensure fill slope stabilization.

4. Another commenter questioned Section 816.104(b)(2), if equipment can be operated safely on a 50 percent slope. Tracking in with tractor-crawler equipment can be operated safely on a 50 percent slope, as long as the equipment is not running along the contour. Exceptions may be allowed to equipment movement along the contour for safety reasons.

5. A few commenters felt that restoration leaving highwalls should receive variances in some cases in western mining and Section 816.104(b)(2) should be changed to reflect this intent. Section 515(b)(3) of the Act requires covering of all highwalls. Legislative history also implies that no highwalls are to remain in thin overburden mine areas (H. Rpt. No. 95-218, 95th Cong., 1st. Sess. at p. 105). Therefore, the comments were rejected. Elimination of the highwall is necessary under final Section 816.104(b)(2).

6. A commenter felt that Sections 816.104(b)(3) and 816.105(b)(4) fail to acknowledge the impossibility of backfilling and grading to achieve a land use compatible with the prevailing land use in unmined areas, e.g. formation of a recreation lake. Under Section 816.133, postmining land use as approved by the regulatory authority may permit such uses which would ensure an improvement in land quality. Since Section 816.133 is applicable, there was no change required under Sections 816.104(b)(3) and 816.105(b)(4).

§ 816.105 Thick overburden.

1. One commenter objected that the 1.2 bulking factor was excessive and not consistent with the approximate original contour concept. Section 515(b)(3) of the Act states that where the overburden is more than sufficient to restore the approximate original contour the excess shall be backfilled, compacted, and graded to attain the lowest grade, but not more than the angle of repose. H. Rpt. No. 95-218 (1977) was cited by the commenter as not visualizing an increase in premining elevation. The definition of approximate original contour states that the reclaimed area should closely resemble the general surface configuration of the land prior to mining. OSM interprets this to mean that the approximate original contour, or configuration, of the premining land is intended, and minor changes in elevation are anticipated. The comment was rejected, and the 1.2 bulking factor retained.

2. A commenter suggested the bulking factor should be increased to 1.3. The Office recognized that in some materials bulking greater than 20 percent is possible. To establish minimum national standards, the 1.2 factor has been retained. This does not preclude regulatory authorities from adopting standards that better suit their regions, as long as the performance standards are met.

3. A commenter objected to total highwall elimination in all cases. According to the commenter, old highwalls offer protection and escape to sheep in Alaska and nesting for wildlife in Wyoming. Section 515(b)(3) of the Act requires restoration to approximate original contour of the land, with all highwalls, spoil piles and depressions eliminated.

The Act and the regulations in 30 CFR 816.104 make special provisions where sufficient overburden is not available, and the reader is directed to the Preamble for that Section.

4. Several commenters objected to the words "hauled or conveyed" used in 30 CFR 816.105(b)(1-4). The commenters requested the word "transport" be used to be more consistent with Section 515(b)(22)(a) of the Act. The intent of the change appeared to be to allow end-dumping. The legislative history clearly shows that controlled placement of spoil is necessary. Spoil must be hauled by truck or other vehicle and "placed and compacted . . ." 123 Cong. Rec. H-7582 (July 21, 1977). Further, the Office does not feel the use of the words "hauled or conveyed" will retard development of new technology in spoil-handling in surface mining.

5. A commenter requested a language change in Section 816.105(b)(5), to be consistent with Section 816.102(c). The Office believes that depressions allowed under 816.102(c) would not be prohibited under 816.105(b)(5) if needed to minimize erosion, conserve soil moisture or promote vegetation. Thus, no change in the text of the rule was made.

§ 816.106 Regrading or stabilizing rills or gullies.

This regulation is intended to minimize soil loss and reduce sedimentation by requiring stabilization of rills and gullies that are more than nine inches deep. Authority for this Section is Sections 102, 201, 501, 503, 504, 507, 508, and 515 of the Act. Literature used in preparing this Section included "Soil Survey Manual", Agricultural Handbook No. 18 U.S. Department of Agriculture, S.C.S. 1951, p. 503, and the technical literature for Sections 816.41-816.42 and 816.45-816.46.

1. Commenters objected to the criteria for determining remedial action necessary for rill and gully control. The Office considered the following alternatives:

(a) Permit rills and gullies to form, but not to exceed the size and number of the premined landscape.

(b) Do not regrade or stabilize eroded areas until revegetation has been established.

(c) Cost-benefit analysis should serve as a criterion for regrading of rills and gullies.

(d) Allow greater depth criteria before applying remedial measures.

(e) Retain the proposed language of the regulations.

OSM chose to retain the proposed language of the regulation. Rills and gullies concentrate runoff water into tiny rivulets and small channels and accelerate erosion (USEPA, 1976, Erosion and Sediment Control, Vol. 1 at 24-25). To distinguish between a natural rill or shallow channel through which overland flow is conducted, the Office has established a maximum acceptable depth of 9 inches, so as to preclude the formation of large gullies that will severely degrade the area. However, the size criteria may be reduced by the regulatory authority where 9 inch gullies are disruptive to the postmining landuse or if they cause excessive erosion or sedimentation.

Sediment derived from rills and gullies can be detrimental to water quality and every effort should be exercised to prevent such erosion. Furthermore, rills and gullies interfere with achieving revegetation and postmining and use. The intent of this provision is to allow stabilization through means other than regrading, if such methods produce equal or better results. Thus, the use of straw (Gilley, 1977, pp. 697-8), other physical or chemical methods of stabilization (Dean, pp. 452-7), or the use of small equipment to fill and regrade in a manner that disturbs little additional area may be permissible.

Rills and gullies formed along disturbed and reclaimed drainageways would be permitted if adequate stabilizing vegetation has been established. The soil losses and destruction resulting from rill and gully erosion are well documented. (USDA Soil Survey Manual, Figure 48, page 263.) As an alternative to the 9-inch requirement of this Section, 6-inch and 13-inch depths were considered, as well as deletion of the requirement entirely. The 6-inch depth would make it difficult in some locations to distinguish between those erosional features requiring repair and features that approximate natural drainage channels in highland (divide) areas. To delete the requirement entirely, or increase the depth to 12-inches, could result in excessive loss of plant growth media by erosion. The 9-inch depth was selected because it is the maximum depth that can be stabilized by most grasses, since a large portion of their roots occur in this surface layer. (USDA Soil Survey Manual p. 250).

§§ 816.111-816.117 Revegetation.

Authority for these Sections is found in Sections 102, 201, 501, 503, 504, 507, 508, 515 and 519 of the Act. These are regulations for achieving the requirements of Section 515(b)(1) and assuming the responsibility for successful revegetation as set forth in Section 515(b)(20) of the Act. Persons conducting surface mining activities must establish on the disturbed area a permanent vegetative cover that will minimize erosion and reduce water pollution which deteriorate the environment and which can be detrimental to the health and well-being of the residents of the affected area. The literature used in preparing the regulations is as follows:

Aldon, E. F., 1975. Techniques for establishing native plans on coal mine spoils in New Mexico in Third Symposium on Surface Mining and Reclamation National Coal Association, Washington, D.C. Volume I, pp. 21, 26.

Aldon, E. F., 1978. Reclamation of coal-mined land in the Southwest, Journal of Soil and Water Cons., Vol. 33, No. 2, pp. 75-79.

Aldon, E. F., and Springfield, H. W., 1975. Reclaiming coal mine spoils in the Four Corners. Reclamation and use of disturbed land in the Southwest, University of Arizona Press, p. 234.

Arnger, W. H. and others, 1976. Revegetation of land disturbed by strip mining of coal in Appalachia, U.S. Department of Agriculture, Agricultural Research Service, p. 8.

Environmental Protection Agency, 1973. Processes, procedures, and methods to control pollution from mining activities, EPA 430/9-73-011, p. 151.

Environmental Protection Agency, 1976. Erosion and sediment control: Surface mining in the Eastern United States, pp. 81-87.

Grandt, A. F., 1978. Mined-land reclamation in the Interior Coal Province, Journal of Soil and Water Conservation, Volume 33, No. 2, pp. 62-68.

Grim, E. C., and Hill, R. D., 1974. Environmental protection in surface mining of coal, Environmental Protection Agency, pp. 189-190.

Guidelines for reclamation of surface mined areas in Utah. 1972. U.S. Dept. of Agriculture, S.C.S., p. 6.

Handbook for making resource inventories: Methods of applying land and grass management principles. 1961. USDI, BIA, Chap. III, p. 14.

Heady, H. F., 1975. Rangeland management, McGraw-Hill, p. 350-351.

Holton, H. N., 1972. A concept for disfiltration estimates in water-shed engineering, USDA; ARS 41-51, Figures 6, 7, and 8, p. 23, 24 and 25.

House Report No. 95-218, 95th Congress, 1st Session, 1977, p. 93.

Indiana, General Procedures Respecting the Administration of Chapter 344, Acts of 1967, Effective Jan. 1, 1968, pp. 1-6.

Iowa, State of, Recommendations for establishment of vegetation on surface mined areas, Item 10, Time of seeding, Land Rehabilitation Advisory Board.

Kentucky guidelines for classification, use and vegetative treatment of surface mine spoil. 1973. U.S. Dept. of Agri., S.C.S., Lexington, Ky., p. 12.

Kranz, B. W. 1974. Benefits in cost and effectiveness of liquid materials use in hydroseeding operations, in Second Research and Applied Technology Symposium on Mined Land Reclamation, p. 163.

Merkel, D. L. 1974. Revegetation in the Southwest—Its hazards and successes, U.S. Department of Agriculture, Soil Conservation Service, pp. 189-190.

Montana Administrative Code, Adopted Rules and Regulations, Pursuant to Title 50, Chap. 10, R.C.M., 1947, pp. 26-48.21 to 26-48.38.

Critical area stabilization in New Mexico, New Mexico Inter-Agency Range Committee Report for the Critical Area Stabilization Workshop, 1973, p. 11.

New York, Mined Land Reclamation Mine Operator Handbook, p. III 1-43.

Ohio Revised Code, Chapter 1513, Strip Mining and Reclamation of Mined Land, Sec. 1513.16, p. 24.

Packer, P. E., and Christensen, G. F. (undated). U.S. Department of Agriculture, Forest Service Guides for controlling sediment from secondary logging roads, p. 28.

A Guide for revegetating bituminous strip mine spoil in Pennsylvania. Research Committee on Coal Mine Spoil Revegetation in Pennsylvania, p. 21, and Appendices I, II, III and IV.

Plass, W. T., 1978. Reclamation of coal-mined land in Appalachia, Jour. of Soil & Water Cons., Vol. 33, No. 2, pp. 56-61.

Power, J. F., Ries, R. E., and Sandoval, F. M., 1978. Reclamation of Coal-Mined Land in the Northern Great Plains Jour. of Soil and Water Cons. Vol. 33, No. 2, pp. 69-74.

Sampson, A. W., 1952. Range management, principles and practices. John Wiley & Sons, Inc., pp. 226, 229 and 232.

Stoddart, L. A., Smith A., and Bos, I. W., 1975. Range management. Third Edition, 1975, McGraw-Hill, p. 483.

Vallentine, J. F., 1971. Range development and improvements. Brigham-Young Univ. Press, Provo, Utah, p. 279.

Vogel, W. G., 1973. The Effect of Herbaceous Vegetation on Survival and Growth of Trees Planted on Coal-Mined Spoil. In Proc. Res. & Appl. Technical Symposium on Mined Land Reclamation, Louisville, Ky. pp. 175-178. Bituminous Coal Research, Inc., Monroeville, Pa., October 1974, Tables 1, 3, 4, 5.

Vogel, W. G., 1975. Use and requirements of lime, fertilizer, and mulch in acid strip mine spoils. In III Proc. Research and Appl. Technology Symposium on Mined Land Reclamation, Louisville, Kentucky, Bituminous Coal Research, Inc., Monroeville, Pa., Tables 1, 2, 7.

Vogel, W. G., and Berg, W. A., 1973. Fertilizer and herbaceous cover influence establishment of direct-seeded black locust in coal mine spoils, in R. S. Hutnik and Grant Davis (ed.). Ecology and reclamation of devastated land, Vol. 2, Gordon & Breach, N.Y., pp. 189-198, Table 1.

Wahlquist, B. T. and others, 1975. Mined-land revegetation without supplemental irrigation in the arid southwest, pp. 29, 31, 32.

Woodward, L. W., 1943. Infiltration capacities of some plant soil complexes of Utah range watershed lands. American Geophysical Union Transactions, pt. II, pp. 468-473.

Z'Berg-Nejedly Forest Practice Act of 1973 (California Forest Practice Act), Div. 4, Chap. 8, Pub. Res. Code, Article 2, pp. 1-18.

§ 816.111 Revegetation: General requirements.

Section 816.111 requires that the operator, in accordance with the reclamation plan required by Section 780.18(b)(5), promptly seed or plant all disturbed areas, except water areas, road surfaces and intensive agriculture areas, and achieve a vegetative cover that is similar to the native species of the disturbed area. One of the principal effects of vegetation is to stabilize the soil surface with respect to erosion. This regulation requires stabilization of the soil with respect to erosion, not prevention of erosion when it would otherwise be a natural process. The language of this Section has been changed to make it consistent with Section 515(b)(19) of the Act and Section 816.111(b)(1) of these regulations. The change was made by deleting the phrase "of species" and inserting the phrase "of the same seasonal variety."

A commenter suggested that the logical topical sequence would be for topsoil to be placed in sequence with or just before revegetation. OSM has not accepted this comment. Regulations dealing with particular topics such as revegetation, hydrology and roads have been grouped together. OSM does not believe that each substantive topic can be located next to related topics. Topsoil is a good example. In the sequence of mining operations, topsoil is relevant early in the operation when it is removed, then when it is regraded and revegetation begins. The Office believes that the regulations are more useful if they are arranged by substantive topics rather than attempting to put them in a mining sequence. Part 816 was released as a preproposed draft in July 1978, organized in the logical mining sequence. Comments on that draft almost universally asked that it be reorganized into substantive topic groupings.

A commenter requested that because of the uncertainty of revegetation in the arid and semiarid West the general requirements of Section 816.111 make reference to the ability of the vegetation to withstand periods of drought with a resiliance similar to undisturbed vegetation. Since the requirements of a diverse, effective and permanent cover that supports the postmining land use, when complemented with the performance standards of Sections 816.116 and 816.117, combine to measure hardiness, no change was made.

A commenter disagreed with the desirability of using native vegetation, contending that it would not be acceptable to use native vegetation for revegetation of disturbed critical areas because of slow establishment rates and difficulty in obtaining seed. The commenter stated further that there are many species which do not happen to be native but for which seed is available and which provide rapid cover until a permanent cover can be established. Section 515(b) (19) of the Act provides for the use of native and introduced species, and therefore, the

use of species that provide rapid ground cover is permissible under Sections 816.112 and 816.114 (b).

A commenter suggested that any quick-cover species be of a type which is not palatable to wildlife. The Office has not changed the regulations based on this comment. The Office believes that the reclamation plan should specify the quick-cover species to be used. It is clear from Sections 816.113, 816.114, and 816.23(b) that a quick-cover species is intended "to control erosion," to "provide adequate stability," and to protect against "excessive water and wind erosion." The operator and the regulatory authority will be able to determine whether wildlife foraging presents a threat to the quick-cover. The Office feels that a choice of cover which would be prevented from becoming established by wildlife foraging would not meet the requirements of the regulations, unless the operator protects the area from use by wildlife.

A commenter felt that, in addition to requiring signs and markers, the Office should require that the permit area be securely fenced during and after mining in order to protect people and animals and to prevent harm to reclamation efforts. This commenter asked that game-proof fences be required or, at a minimum, stock-proof fences. The Office has decided not to require fencing for all mines. Rather, the Office believes that the measures which are best suited to ensure safety and protect reclamation areas are better determined on a mine-by-mine basis by the operator and the regulatory authority. The Office has based this decision on the fact that fencing is expensive and may, on occasion, unduly restrict wildlife ranges. Also, in many mining areas there is no need to fence against livestock, since livestock do not roam freely in the area. However, the lack of fencing regulations does not relieve the permittee of the responsibility associated with human safety and achieving acceptable revegetation which may, in some cases, require control of wildlife and domestic livestock.

A few commenters recommended a language change in Section 816.111(a) to exempt areas affected by mining activity prior to the effective date of applicable prime farmland provisions. The suggestion has not been adopted in Section 816.111(a). The issue of which lands affected by mining activities prior to the effective date of the Act are subject to the prime farmland requirements is addressed in 30 CFR 785.12 and the preamble for that Section.

A commenter suggested that "predominately" be added between the words "species" and "native" and that the Office delete "or species that will support the approved postmining land use." Since Section 816.112 already provides for the use of introduced species and species selection is based on postmining land use, these suggestions have not been specifically incorporated in these regulations.

A commenter suggested additional language for Section 816.111(b)(1) that would specifically exempt "spoil pile areas prior to leveling" from the revegetation requirements. Section 515(b) (4) of the Act requires that the operator stabilize and protect all surface areas including spoil piles to effectively control erosion and attendant air and water pollution. It may be difficult and often impractical to revegetate spoil piles while they are being "worked." However, when spoil piles are not contemporaneously worked, they must, because of their pollution potential, be protected from erosion. Section 816.114 provides for the use of alternative materials to control erosion. Since the regulatory authority may determine that revegetation is essential to stabilize spoil piles that are to be exposed for extended periods of time, the suggestion has not been adopted.

A commenter stated that in Section 816.111(b) (4) the term "intensive agriculture" was not defined and suggested the term "cultivated crops" from Section 701.5 and a definition for "cropland." OSM has determined that the definition of "cropland" describes the intent of the Section and the term "cropland" has been adopted.

§ 816.112 Revegetation: Use of introduced species.

Section 816.112 provides for the use of introduced species when necessary to achieve the approved postmining land use or when a quick, temporary cover is needed to stabilize the area. Also, the introduced species must be compatible with animal and plant species of the area and meet the requirements of applicable State and Federal seed laws. In addition, the plan approved by the regulatory authority must provide for the establishment of permanent vegetation when introduced species are used for quick and temporary cover.

Many introduced species, annual and biannual, become established more quickly and provide more abundant growth than perennials and may in some instances be used to advantage in controlling erosion while permanent perennial species become established. Establishment of native species normally occurs over too long a period of time, often requiring 1 to 3 years for establishment, to effectively protect the soil and hydrology (Sampson, 1952, pp. 232; Valentine, 1971, pp. 279, and Heady, 1975, pp. 350-351). Introduced species, especially annuals, can be used as a "nurse crop" to ameliorate severe conditions such as intense insolation, high surface temperature, and rapid evaporation that make establishment of permanent vegetation difficult on many sites (Plass, 1978). The advantage of using introduced species when reclaiming mined lands is supported by Aldon (1978, pp. 76), Grandt (1978, pp. 64), Plass (1978, pp. 58-59), and Power and others (1978, pp.79).

As stated in the preamble of the proposed regulations (43 Fed. Reg. 41775, Sept. 18, 1978), the requirement for appropriate field trials should be interpreted broadly to include successful experience with species in the mined area or a similar area. Naturalized species that have been in common usage, such as the tree species in the Great Plains, will generally have been demonstrated to be acceptable. However, the operator and the regulatory authority must be mindful of the geographic adaptation of each species, since species became established only under conditions similar to those under which they evolved (Sampson, 1952, p. 266), and of the many plant species, both introduced and native, which have been used to improve and stabilize the soil (Sampson, 1952, p. 299).

As a result of several comments, Section 816.112 has been modified to clarify the conditions for using introduced species. A proviso has been added on the suitability of introduced species as related to the existing plant and animal species of the region.

A commenter suggested new wording for this Section that would establish a requirement for a revegetation plan. This comment has not been accepted because the revegetation requirements of Section 779.19 are an integral part of the reclamation plan.

A commenter requested that this section of the regulations made specific reference to Executive Order 11987, "Exotic Organisms." Since the regulations require that all seed meet applicable State and Federal seed or introduced-species statutes, this reference has not been incorporated in the regulations.

A commenter did not want any use of introduced species allowed. The suggestion is contrary to Section 515(b)(19) of the Act and has not been adopted.

A commenter urged that a mix of introduced species be required and argued that this would add to diversity of species. The present regulations allow use of introduced species for a variety of needs such as quick cover, or for wildlife. While a mixture of species is usually desired, sometimes a mixture containing introduced species may not be compatible with postmining land uses. This suggestion has not been adopted.

A number of commenters contended that the requirement for appropriate field tests was unnecessarily rigid and that other criteria, such as growth chamber, greenhouse, or other validly controlled research projects, as well as minesite plots that are established using professionally recognized techniques, can be equally valid when determining suitability of introduced species. Field trials are basic to the regulatory authorities' objectives of determining desirability, compatibility, and necessity of using introduced species; thus, the commenters' arguments are rejected. However, OSM agrees that minesite plots, when properly established by personnel using recognized techniques, could constitute field tests and may be sufficient for determining the desirability of using introduced species.

7. Several commenters were concerned that the use of introduced species would reduce the overall productive potential of grazing areas. They recommended additional phrases that were intended to ensure that the use of introduced species did not reduce the overall productive potential of an agricultural unit by decreasing the availabiltiy of native species. As a result of these comments, a new paragraph was added to this Section. Since Paragraph (c) requires that introduced species be compatible with the plant and animal species of the region, the Office believes this requirement will assure that native species are used when necessary to maintain the overall productivity potential of an agricultural unit, especially grazing areas.

In addition, these commenters suggested language that would require that measures be taken to establish native species when introduced species are used to provide a quick, temporary, and stabilizing cover. Since the Act does not mandate that all areas disturbed by surface mining activities be established in native species and the regulations require that species be native to the area unless the regulatory authority aproves the use of introduced species, the suggestion to require native species has not been accepted. However, language has been added to assure that measures are taken to establish permanent vegetation when introduced species are used to provide a quick, temporary, and stabilizing cover.

Several commenters contended that this Section did not assign a responsibility for making the conversion from a "quick, temporary, and stabilizing cover" of introduced species to a permanent cover of native species. These comments have been accepted and language has been added to assure that measures to establish permanent vegetation are included in the plan because establishment of a quick and temporary cover may not provide adequate, long-lasting soil stability for a slow-developing climax, such as oak-hickory, or other slow-developing vegetative communities not readily established by succession. These slow-developing communities must be seeded or planted if permanent vegetation is to be readily established and erosion minimized.

A few commenters suggested the incorporation of language to assure that introduced species were palatable and nutritious for wildlife. As a result of these comments and because the purpose of the Section is to establish conditions for use of introduced species, a new paragragh requiring specific consideration of the introduced species' compatibility with the mutual biotic community has been added that requires that introduced species be compatible with the plant and animal species of the region.

Several commenters suggested that "poisonous" and "toxic" are redundant because the words are virtually synonymous. Since most States have a noxious weed list and in order to avoid the spreading of, and subsequent propagation of, undesirable, poisonous and noxious species, the seed or seedlings used in revegetating disturbed areas would be required to meet Federal and applicable State requirements for purity. The suggestion to change "toxic" to "noxious" has been accepted.

A commenter argued that if introduces species are required in order to reclaim an area following mining, the area is unsuitable for mining. Another commenter contended that difficulty in obtaining seed and slowness of establishment make native species undesirable and they should not be required. Because the Act provides for the use of native and introduced species "when necessary and desirable" (Sections 515(b)(19), the Office has retained the provision for their use.

§ 816.113 Revegetation: Timing.

This Section requires the operator to seed or plant during the first normal or recommended planting period for the land-resource area. To minimize erosion and reduce stream siltation, the regraded area should be seeded as quickly as possible after the reclamation grading is completed (Vogel, 1974, pp. 175, and Vogel and Berg, 1968).

Seeding immediately after grading takes advantage of a seedbed provided by the grading and can improve the chances of establishing a plant cover before erosion patterns are formed. When rills form, it becomes more difficult to establish a plant cover that effectively controls erosion. A temporary cover of small grains, grasses, or legumes is required when necessary to effectively control erosion while a permanent cover is being established.

The requirements of Section 816.113 are intended to assure that there will be no major time lag between completion of regrading and seeding and planting of the area to be revegetated. As stated by Sampson (1952, p. 245), the time of seeding depends upon the method of land preparation and the forage species used; and Vogel (1974, p. 175) states that seedbed preparation is essential for successful establishment of seeded vegetation. Annuals such as small grains, grasses, or legumes can be used to protect the site and aid in the establishment of perennial species (Plass, 1978, p. 58). In many locations, suitable species are available and climatic conditions are favorable for establishing seedlings that provide ground cover for erosion control throughout a major portion of the year (Plass, 1978, p. 58).

The content of this Section is required in several State reclamation regulations. (Indiana, p. 5; Montana, p. 47; New York, p. III-37; and Ohio, p. 24). Also, seeding-time benefits are recognized in various State guidelines (Iowa, Item 10; Kentucky, p. 12; New Mexico, p. 11; Pennsylvania, p. 21 and appendices I, II, III and IV; and Utah, p. 6).

Some commenters felt the last sentence of the Section was out of place since it referred to mulching, and it was suggested that the mulching language should be deleted from this Section. Other commenters suggested that the last sentence be deleted because the language of the proposed regulation states that mulching is required. These commenters argued that mulching was not required by Section 816.114. They contended that mulch should be applied only when necessary at a time and by methods that will not show adverse effects to establishing vegetation. The Office recognizes that duplication did exist and this sentence of the Section has been revised by deleting the mulching statement and retaining the requirement for seeding.

§ 816.114 Revegetation: Mulching and other soil stabilizing practices.

Under Section 816.114, the mulching requirement is flexible and the type, use, benefits, and necessity of mulch and soil stabilizing materials will be at the discretion of the regulatory authority.

Mulches such as straw, hay, bark, wood chips, and wood fiber, which are widely used for erosion control and establishment of vegetative materials may be utilized. Also, the establishment of annual, herbaceous plants provides an in situ mulch that will protect the site and aid in the establishment of a permanent cover composed of perennial plants. Selected

chemical soil stabilizers may be used alone or in combination with appropriate mulches not only to reduce erosion but to aid in vegetative establishment. Plass (1978) states that the use of annuals can be beneficial in establishing perennial species. The moisture-saving, soil-stablizing, and, consequently, seeding-establishment benefits of mulching are documented by Vogel (1974). Other literature recognizing the benefits of mulch are Aldon (1978, p. 78), Grim and Hill (1974, pp. 189-190), Environmental Protection Agency (1976, pp. 81-87); Armiger (1976, p. 8); Aldon (1975, pp. 21, 26); Wahlquist (undated, pp. 189, 190); Packer and Christensen (undated, p. 28); and Environmental Protection Agency (1973, p. 151).

Section 816.114 requires that mulch or soil stabilizers be used on regraded and topsoiled areas except where the permittee can demonstrate that alternative procedures will achieve vegetative success and do not cause or contribute to air or water pollution. The regulatory authority may, on a case-by-case basis, approve the use of alternative procedures. This flexibility in the mulching requirement is intended to accommodate those conditions where the permittee can demonstrate that mulching is not beneficial.

The regulatory authority may require mechanical or chemical anchoring of mulch when anchoring is necessary to protect the soil and vegetation. The Environmental Protection Agency (1973, p. 151), states that mulches must be selected to fit the climatic conditions in the area where they will be used; and Aldon (1978, p. 77) reports that hay mulch, crimped in twice, provides a stable, long-lasting mulch on mine spoils in the southwest. EPA (1973, p. 152) states that runoff control can be achieved by the use of surface stabilizers that reduce erodibility of the surface.

Annual grasses and grains may be used alone or in combination with other mulches when the regulatory authority determines they will provide adequate erosion control and will prevent establishment of perennial species that are approved for the postmining land use. Plass (1978, p. 58) states that grasses are usually the most reliable vegetation for site protection and that perennials can be seeded with annuals or when annuals mature.

Chemical soil stabilizers may be used alone or in combination with appropriate mulches and vegetative covers approved for the postmining land use. The purpose of a chemical binder or tack is to stabilize soil temporarily against wind and water erosion and prevent evaporation of water from the soil surface, until the treated area becomes vegetatively stabilized. Binders may be used to stabilize the soil temporarily until seeding can be performed. EPA (1976, p. 81) states that chemical binders are effective in retaining soil moisture. Plass (1978, p. 60) states that polyvinyl acetate, acrylic copolymers, and vegetable gums can be applied safely with seed and fertilizer.

This Section has been restructured to set forth more clearly the subject matter. Paragraph (a) of the proposed regulations has been divided into Paragraphs (a) and (b). Paragraph (c) is virtually the same as in the proposed regulations, and a new Paragraph (d) that provides for the use of chemical soil stabilizers has been added.

A commenter stated that the Section heading "mulching" was too restrictive and suggested that a heading such as "mulches and soil stabilizing materials" would be more appropriate since reliable methods for erosion control include not only a variety of mulches but chemical soil stabilizers and annual vegetation. It is believed the term "soil stabilizing" is appropriate. However, the word "practices" is preferable to "materials" because the Section addresses the use of materials and cultural practices. The heading has been accordingly modified.

Several commenters requested language denoting that a sufficient quantity of mulch must be used. The term "suitable" connotes that a kind and amount of mulch adequate to achieve the necessary stabilization is required. Therefore, additional descriptive language is deemed unnecessary.

A commenter argued that the mulching requirements of Section 816.114 would be virtually impossible to enforce since they did not contain a specified minimum amount of mulch to be applied to the land. The regulations have not been changed to accommodate this request because of the varied site needs and benefits derived from the use of mulch. The regulatory authority should determine the amount and type of mulch on a site-by-site basis.

A number of commenters made the point that not all mulches under every condition require anchoring. This is valid and the regulations are revised to allow the regulatory authority to determine when mulch anchoring is required.

5. Several commenters expressed concern that Section 816.114 of the proposed regulations was too restrictive and did not adequately address the use of annual grasses, especially cereals, and chemical soil stabilizers as mulch. This suggestion is adopted and the Section expanded to make it clear that chemical soil stabilizers and annual grasses may be used alone or in combination with appropriate mulches.

6. Several commenters requested the addition of a paragraph that would require mulching of a regraded area when topsoil has not been redistributed within 5 working days after completion of backfilling and regrading. Numerous factors such as slope, season of the year, and precipitation are basic to determining the need for mulch; thus the mulching requirements, including time constraints, should be determined by the regulatory authority on a local or site-specific basis. The operator is required to control erosion during backfilling and grading as well as during the topsoiling operation; therefore, it will be necessary that the operator protect the disturbed area from erosion during periods of prolonged exposure.

§ 816.115 Revegetation: grazing.

Section 816.115 relates to grazing on recently revegetated areas. The purpose of this Section is to incorporate livestock control practices essential to determine the ability of the species when established to withstand use by livestock where the postmining land use is to be range or pastureland. This requirement is intended to assure that the permanent vegetation will support livestock at about the number that would be supported had the area not been mined.

Livestock grazing may not be desirable on reclaimed land until the seedlings are established and can sustain managed grazing. The need for the control of livestock is supported by Aldon and Springfield, 1977; Grandt, 1978, p. 65; Sampson, 1952, p. 232; Vallentine, 1971, p. 279; Heady, 1975, pp. 350-351; and Stoddart et al., 1975, p. 483; and USDI, Bureau of Indian Affairs, Chap. III, 1961, p. 14. The operator may, on his own, restrict such grazing for some time after revegetation is accomplished in order to avoid augmented seeding which would extend the period of his bond liability. However, in order to assure that the vegetation will sustain its intended use when the use is range or pasture land, it is essential that before the bond is released the reclaimed area be subjected to the stresses comparable to the permanent use.

It is stated in House Report No. 95-218, p. 106 (95th Cong., 1977), that the word "effective", as used in Section 515(b)(19) of the Act, "describes both the productivity of the plant species concerning its utility to the intended land-use (e.g., nutritional value for livestock) as well as its capability of stabilizing the soil surface with respect to reducing siltations to premining background levels." Thus, when the post-mining land-use is range or pastureland, grazing is required. The type

and extent of grazing is to be such that it will establish the utility of the planted species and demonstrate the survival, coverage and productivity of the revegetation.

1. Several commenters felt that grazing of the reclaimed land should be done at a time and stocking rate agreed upon by the surface owner or manager and the regulatory authority. It was argued that there should be site specific decisions since grazing may not be practical or desirable due to size, location, accessibility, or various other factors related to livestock use. Since, the factors mentioned by the commenters would preclude pastureland as the post-mining land-use, the area involved would not come within the requirement of this Section and these comments were not accepted.

2. A commenter argued that the permittee should be required to fence the area to prevent grazing while the plants are becoming established. The proposal was not adopted since Section 816.112 provides adequate controls to assure prompt establishment of an effective vegetative cover and Sections 816.116 and 816.117 ensure that permanent vegetation is successfully established. Thus, the absence of a fencing requirement does not relieve the permittee of the responsibility to use whatever methods are necessary, including fencing, to achieve successful revegetation of the disturbed area.

3. Commenters argued that the Section should be deleted since the revegetation standards for success are enumerated in Section 816.116. In addition, the commenters contended the language was ambiguous because of the phrase "stocking rate equal to or less than approved by the regulatory authority" could be construed to mean zero cattle (livestock). Since Section 816.116 does not provide a test of the vegetative species' ability to sustain use by livestock when the post-mining land-use is range or pastureland, the Section was not deleted. However, the language was changed to make it clear that the revegetated area was to be stocked at a rate approximately equal to that for similar non-mined land. The Office made this change to assure that the regulatory authority had the opportunity to evaluate the grazing utility and the ability of the vegetation to sustain use by livestock.

4. Several commenters suggested leaving livestock grazing to the discretion of the applicant since they did not think OSM was proposing that the applicant must stock reclaimed land. The grazing requirement is intended to assure, when the post-mining land-use is range or pastureland, that the permanent vegetation can be maintained when used by livestock and will support livestock numbers comparable to the number that could be supported had the area not been mined. The grazing requirement will enable the regulatory authority to evaluate the grazing utility of the vegetation. Since this requirement will be an especially valuable test when the post-mining vegetation is to be grazed by livestock, the Office did not accept the recommended regulation change.

Others said there was no need or authority to require that the mine enter the cattle business and they stated that the Section should be deleted.

This Section is not intended to require that each miner go into the livestock business. However, the Office feels that when the reclaimed lands are to be used for livestock grazing, it is essential that the regulatory authority be able to determine whether the revegetation will actually sustain such use.

5. Commenters suggested that, in areas with less than 26 inches of average annual precipitation, the grazing requirement should be five years instead of two. Other commenters supported the two-year requirement, stating it would allow the regulatory authority and the operator an opportunity to determine if the revegetation effort is successful for the intended land-use and will be an especially valuable test for the low-rainfall-severe climatic conditions of the West. To assure that grazing was not required during time critical to the growth and establishment of new seedlings, the grazing requirement was left at two years.

6. A commenter suggested requiring that the regulatory authority determine when vegetative cover that is satisfactory for grazing has been established. It was argued that the present wording would allow for the initiation of grazing immediately after seeding. The Office did not accept the suggestion since the operator is responsible for the success of the revegetation and would not want to jeopardize his newly established seedlings by initiating grazing before the vegetation was adequately established.

7. Commenters stated that the Section ignores good range management practices and suggested requiring that grazing "shall be in accordance with range management techniques constituting the best technology currently available." It was argued good management frequently requires alternating years of grazing and non-use of certain grazing land. The Office recognizes that many livestock operations rely on deferment and rest rotation grazing systems to maintain or increase the amount of forage that is available for use by livestock. The Office believes that these grazing systems can be temporarily modified, when necessary, to meet the two-year grazing requirement without endangering the survival, coverage and productivity of the vegetation; therefore, the suggestion was not accepted.

8. A commenter suggested an amendment to provide that revegetation should have the same nutritional value for livestock as the native range. The Office believes that the regulatory authorities' approval of the reclamation plan is an adequate safeguard to assure nutritional value of the species to be used since the regulatory authority should not approve a plan that does not contain species and reclamation procedures to assure effective productivity.

§ 816.116 Revegetation: Standards of success.

Section 816.116 requires that success of revegetation be measured by techniques approved by the regulatory authority. The regulatory authority is to consult with appropriate State and Federal agencies to determine the proper techniques for measuring the vegetation that will be involved. These requirements are based on Kuchlers work that is cited in the preamble for Section 779.19.

Technical guides published by United States Department of Agriculture (USDA) or United States Department of the Interior (USDI) or reference areas can be used for assessing adequacy of the ground cover and productivity of the revegetated area. Many Federal agencies have technical guides for evaluating the vegetative resource on the lands they serve. These technical guides set forth procedures to be used when collecting basic and sound resource information and contain standards for evaluating the land and associated vegetative resource. USDA and USDI have basic field data for most soils and types of vegetation. This basic, site specific, information can be used, when approved by the regulatory authority, to establish standards for determining success of ground cover and production of a particular site. Should site specific information not be readily available for the particular soils and vegetative type of the permit area, the procedures set forth in the technical guides can be used to collect the ground cover and production information.

When reference areas are used as a basis for determining success of vegetation it will be necessary that the operator measure, using standard techniques that are approved by the regulatory authority, the composition of the vegetation and the ground cover of the reference area and the permit area. The measurements of the two areas will be used to determine comparability since the reference area must be similar to and representative of the geology, soils, slope, and vegetation in the permit area. The areas will be used

to measure ground cover, productivity (stocking for trees and shrubs), and species diversity. Any of a number of vegetation measuring techniques may be authorized by the regulatory authority to measure the vegetation of the permit area and reference areas before mining and when measurements are required during the period of responsibility as set forth in Section 816.116(b)(1) of the regulations. When permit areas contain more than one soil or vegetative type it will be necessary to use a reference area that is representative of each site. The measurements of the vegetation and ground cover of the reference area and the permit area will be used by the regulatory authority to determine when the disturbed area has been adequately revegetated.

The period of responsibility begins when the ground cover or productivity for cropland that is not designated as prime farmland equals the approved standard after the last year of augmented seeding, fertilizing, irrigation or other work intended to ensure successful vegetation. The cultural practices of seeding, fertilizing, irrigating and other locally acceptable practices will not be considered augmentative for cropland or pastureland when the cultural practice and the rate of application is an accepted local agricultural practice that can be expected to continue as a postmining practice. Also, to assure that the vegetation is capable of self-regeneration and plant succession, the ground cover and production when applicable shall equal the approved standard for the last two consecutive years of the responsibility period.

The period of responsibility is based on annual precipitation; this regulation provides a list of source documents that can be used to determine annual precipitation at the site. In addition to the source documents, the responsibility period may be based on 10 years of continuous and reliable precipitation records from stations located in or adjacent to the mine plan area. When annual precipitation is based on information other than that contained in official records that are cited in the regulation, the data must span ten years. This period is thought to be the minimum number of years necessary to obtain a reliable indication of the annual precipitation since extreme seasonal variations could result in misleading information if a shorter time-frame were used.

Ground cover and productivity of the revegetated area will be considered equal when they are at least 90 percent of the cover or production of the reference area with 90 percent statistical confidence. Eighty percent statistical confidence is required on shrub land. These are confidence levels commonly used for the respective vegetative types. When technical guides are being used, 90 percent of the standard approved by the regulatory authority will be considered equal. Exceptions may be granted when the area has previously been mined, the area is to be used for industrial or residential use within two years after grading is completed, when the area is to be used for cropland or when the area is to be developed for fish and wildlife or forestland. At a minimum, the ground cover of previously mined areas shall not be less than can be supported by the best available topsoil or other suitable material or no less than the ground cover that existed before the area was redisturbed and shall be adequate to control erosion. Thus, the operator is required to provide erosion control equal to or greater than that which existed prior to mining and the replaced soil could, in instances where improvements can be made in the vegetative growth medium, support a vegetative cover that provides more protection than existed before the previously mined area was redisturbed. Temporary ground cover can be used when the area is to be used for residential or industrial purposes within two years after regrading is completed but the operator is not relieved of his responsibility to control erosion. Thus, annual plants, mulches, soil stabilizers or a combination of materials that will control erosion, could be determined acceptable by the regulatory authority.

The cropland requirements of this Section are intended to apply to land that is used as cropland but is not prime farmland. The success of revegetation of this cropland is based on production. The period of responsibility, five or ten years, is to start at the time of initial planting of the crop that is to be used to determine success. That crop should be specified in the reclamation plan and should be one that can reasonably be expected to be used as a post-mining crop.

The crop production standard is to be based on a reference area or other standards that are based on the technical guides as approved by the regulatory authority. Production shall be considered equal to premining production if it is at least 90 percent of the approved standard for the last two years of the responsibility period. The use of 90 percent of the approved standard as the standard of success is to allow for those climatic variations, e.g., temperature, timeliness of precipitation, etc., that may affect production during the two consecutive growing seasons that production is measured to determine revegetation success.

When the area is to be developed for fish and wildlife management or forestland, the success of revegetation shall be determined on the stocking of trees, shrubs or half-shurbs, and ground cover. Stocking rates are to ensure establishment of live trees sufficient in number to use the suitable and available growing space. When fish and wildlife or recreation are the primary postmining land use, a pattern of distribution varying in density may provide a higher or better use than when plant species are distributed more uniformly. Stocking standards are required instead of yield standards (production) because of the number of years required for trees to reach a marketable age and shrubs and half-shrubs to reach a size that allows a direct measurement of yield as compared to the production of a reference area or technical guides on production.

The ground cover of areas to be used for fish and wildlife management or forestland must be at least 70 percent of the ground cover of the reference area with 90 percent statistical confidence to be considered acceptable, or, if the regulatory authority determines that another amount of ground cover will control erosion, that amount can be determined acceptable.

The ground cover requirement is reduced for areas to be used for fish and wildlife management and forestland because the use of grass and legumes, when used for site protection, has discouraged tree planting (Plass, 1978, p. 59). Plass (p. 60) also states that shrub species are desirable components of a vegetative cover on sites where forestry and wildlife uses are contemplated, and Vogel, (1973, p. 204) states that herbaceous vegetation covering 70 percent or more of the ground will strongly complete with trees planted at the same time. This degree of ground cover approximates standards required in Section 816.116(d) (1) and (2).

The operator is required to maintain fences, if they are necessary, and to manage properly the revegetated area, and may be required by the regulatory authority to conduct periodic measurements of vegetation, soil and water when the regulatory authority determines that the management practices and measurements are essential to assure compliance with these regulations and achievements of vegetative success. The practices and measurements may be required for the duration of the period of responsibility.

This Section provides for the use of a fixed standard for determining success of vegetation when permit areas are 40 acres or less. To be eligible the operator must have a permit for 40 acres or less and the permit area must receive more than 26 inches of annual precipitation. The use of the standards in Section 816.116(d) is contingent on meeting the above requirements and obtaining the regulatory authority's

approval to use the standards of this Subsection when determining success of revegetation.

The operator will be required to maintain a minimum of 70 percent ground cover for five consecutive years on areas planted to herbaceous species as will as areas planted to herbaceous and woody species. When woody plants are part of the postmining land use, a mimimum stocking of 400 woody plants is required per acre. A mimimum of 600 woody plants is required per acre on steep slopes. Success of stocking is to be determined at the end of the five year period of responsibility. The basis for the ground cover requirement is discussed in the preamble of Section 816.117. The regulatory authority may set more stringent stocking and ground cover standards if they are required to prevent pollution, protect quality of the environment and health, safety and general welfare of the public. Since local and regional reforestation practices vary in the recommended number of trees per acre, it is believed the minimum of 400 trees and shrubs will provide sufficient flexibility to satisfy most regionally recommended reforestation practices and allow the regulatory authority to increase the number of trees per acre when local reforestation practices warrant.

These regulations will allow for the flexibility required, as a result of the diverse climatic and soil conditions, to properly measure the different vegetative types that are found in the mining areas.

1. Many commenters argued that the reference area concept is not practicable, that other established procedures and proven techniques should be allowed to determine success of revegetation, that measurement techniques should be left to the approval of the regulatory authority and that rewording is needed for clarification. USDA Forest Service and Soil Conservation Service and USDI Bureau of Land Management, Bureau of Indian Affairs, Geological Survey, Bureau of Mines, and Fish and Wildlife Service currently have established technical guides and proven techniques for describing rangeland sites and evaluating the vegetative resource on the lands they administer or serve. The Soil Conservation Service range site guides and evaluation procedures described in the National Range Handbook (1976) are uniformally accepted and used for assessment of the private lands throughout the United States. The National Range Handbook was prepared for use by all rangeland managers interested in resource conservation programs. Other federal agencies cited above have established and proven techniques for evaluating success of vegetation establishment, condition and trend. These data banks are frequently relied upon when seeking information on vegetation. Therefore, the Office has decided to revise the proposed regulation to allow for use of other technical guides in place of reference areas to measure the success of revegetation.

Section 816.116 has been rewritten to provide an alternate to reference areas. Section 816.116(a) specifies that the Director will approve technical guides from among those published by USDA or USDI which may be used in lieu of approved references areas, as a basis for determining whether the revegetation is successful under the standards in Section 816.116(b)(3).

Section 816.116(b)(1) was amended to conform with the preceding Section which now allows the regulatory authority to use either reference areas or other technical guides approved by the Director for assessing ground cover and productivity.

2. Several commenters suggested changing the requirements of Sections 816.116(b)(1)(i) and (ii) to maintain vegetation equal to reference areas (or other standards) to periods ranging from two years to 10 or more years. The regulations implement the time periods specified in Section 515(b)(20) of the Act so these requirements cannot be changed.

3. Many commenters objected to the requirement that ground cover and productivity be equal to the standards for each consecutive year of the responsibility period. They argue that annual measurements are unnecessarily expensive and such data from newly established vegetation has little utility. Further, it was requested that the regulations specifically address when the responsibility period begins. Some suggest the only requirement should be to achieve equal ground cover and productivity by the end of the responsibility period. Numerous other time spans were considered both at the beginning and the end of the period. Since vegetative response varies greatly due to a wide array of factors, especially influenced by local climate, several commenters indicated that consecutive year measurement should be required to counteract the effects of an extraordinarily good year.

Section 515(b)(19) of the Act requires establishment of vegetation at least equal in extent of cover to the natural vegetation and Section 515(b)(20) requires five or 10 years of responsibility for at least that amount of cover after the last major work assuring success. The Office interprets this to mean that cover must meet the standards at the start of the responsibility period and cover and productivity must meet the standards at the end of the responsibility period. Therefore, the regulations were changed to require measurements that show vegetation at least equal to standards for ground cover to initiate the responsibility period and to standards for both ground cover and productivity for two consecutive years at the end of the period. The consecutive years should not immediately follow augmentation practices but occur at the end of the responsibility period to minimize the effects of the augmentation.

4. Several commenters wish to allow seeding, fertilizing or irrigation during the responsibility period. Section 515(b)(20) of the Act specifies that the period of responsibility extends for five (or 10) years after the last year of augmented seeding, fertilizing, irrigation or other work. Therefore, no additional seeding, fertilizing or irrigation can occur after start of the period of responsibility for determining success of revegetation. If such augmentation is necessary, then the period begins to run anew. The augmented seeding, fertilizing and irrigation does not apply to cropland and pastureland that can be expected to have a similar postmining use and which should be managed in accordance with acceptable local agricultural practices.

5. Section 816.116(b)(2) was amended to provide for the use of a wider range of reliable source material when determining annual precipitation. To confine the determination of precipitation to the use of a small scale map would not provide accurate information in areas where precipitation averages are highly variable in short distances, such as mountains, mesas and valleys. The regulations now include a list of example materials that may be used as source documents when making determinations on precipitation.

6. Various commenters suggested either increasing or decreasing the percent of cover and productivity requirements of Subsection 816.116(b)(3). Further, some contended that success should be determined on the basis of annual measurements throughout the period of responsibility while others stated that success should be based on measurements taken the last year of responsibility. It is believed that the 90 percent requirements for ground cover and production is an equivalent measure of success since there has to be a basic assumption that productivity will continue to improve with time when the land has been restored to the original productive capacity. The additional increase resulting from time will be due to a combination of factors including microbial activity and increased organic matter content. Further, a two-year minimum time base is required to adequately assess the ability of a perma-

nent vegetative cover to regenerate and sustain plant succession.

7. Several commenters were concerned that the use of introduced species would reduce the overall productive potential of grazing areas. They recommended additional phrases that were intended to ensure that the use of introduced species did not reduce the overall productive potential of an agricultural unit by decreasing the availability of native species. As a result of these comments and comments discussed in paragraph 9 of this section, a new paragraph was added. Since Subsection (c) requires that introduced species be compatible with the plant and animal species of the region, the office believes these requirements will assure that native species are used when necessary to maintain the overall productivity potential of an agricultural unit, especially grazing areas.

In addition these commenters suggested language that would require that measures be taken to establish native species when introduced species are used to provide a quick, temporary and stabilizing cover. Since the Act does not mandate that all areas disturbed by surface mining activities be established in native species and the regulations require that species be native to the area unless the regulatory authority approves the use of introduced species, the suggestion to require native species was not accepted. However, language has been added to assure that measures are taken to establish permanent vegetation when introduced species are used to provide a quick, temporary and stabilizing cover.

8. Some commenters argued that ground cover and productivity should both be measured for all land uses. The regulations, however, allow for consideration of productivity alone, in the case of cropland, and for ground cover, together with stocking, in the case of fish and wildlife habitat uses. In all other cases, both ground cover and productivity standards must be met. The office believes the commenter's suggestion would have resulted in onerous requirements unrelated to sound reclamation goals. Under Section 515(b)(20) of the Act, cropland is to be restored without regard to "cover," since productivity is the appropriate measure of farmland success. For fish and wildlife habitat, productivity is less important than cover, since the floral community provides shelter to the animal communities, not only food. An emphasis on productivity would unduly restrict post-mining vegetation in a manner at variance with § 515(b)(24) of the Act.

9. In response to comments, Subsection 816.116(b)(3)(i) has been modified. The proposed regulation required that the previously mined area, as well as the unmined portion of the mine plan area, be restored to ground cover equal to the ground cover of the best topsoil of the mine plan area. Such a requirement may not be attainable on that portion of the mine plan area that has been previously disturbed and would be cause for operators to skip previously mined areas when requesting a permit. Thus, the previously mined areas would never be reclaimed to their potential. This Section has been revised to encourage vegetative improvement of the premined portion of a mining plan and, as a minimum, to require revegetative cover equal to that which existed prior to remining. These requirements should provide incentive for operators to include within their mining plan those areas that have been previously disturbed. It will also encourage the regulatory authority to recognize the plant growth potential of the overburden materials of the redisturbed area and require the operator to utilize the most favorable plant growth medium existing in the redisturbed area. The operator may be required to improve the plant growth medium over that which existed prior to redisturbing the area.

10. Commenters suggested that the productivity standards for prime farmland be covered not in this general revegetation Section but separately in Section 823. That suggestion was adopted to provide greater clarity.

11. Commenters argued that the phrase "for any significant portion of the mined area" was ambiguous and should be deleted. It was further argued that careful selection of sampling or reference areas and nonbiased random sampling of them for production and ground cover will produce results which will clearly show the degree to which portions of the rehabilitated area do or do not meet the revegetation requirements. The Office agreed with these comments and this phrase has been eliminated from Section 816.116(b)(3)(iii).

12. Comments on standards for tree and shrub stocking suggested developing appropriate standards for assessing ground cover success when herbaceous plants are used with woody plants. The standards used to assess ground cover or productivity for other postmining land uses often reduce woody plant survival and growth. A reduction in ground cover will favor better survival and improve growth. This is particularly important for commercial tree species. The new Subsection 816.116(b)(3)(iv) will provide a desired reduction in ground cover while providing acceptable erosion control. The degree of reduction approximates standards given in Section 816.116(d)(1) and (2), and is believed adequate to stabilize the revegetated area.

13. A commenter suggested that Subsection 816.116(c)(2) be changed to require only annual soil tests to determine the amount of lime and fertilizer to use as a topdressing. Since the proposal would not necessarily have a universal application and could eliminate other potential testing needs, it was determined that this part of the regulation should be retained. In addition, the existing regulations encompass the suggestion and include other tests that may be approved by the regulatory authority.

14. Several commenters objected to the 40-acre limitation of Section 816.116(d) while others proposed a new Subsection for 40-acre permits in areas that receive less than 26 inches of annual precipitation. These regulations will allow use of the reference area concept where deemed necessary without imposing it where it is not necessary. The rewording of Section 816.116(a) has accommodated the request by providing for the use of the reference area or technical guidance procedures that are approved by the regulatory authority.

15. Commenters argued that it was not necessary that the standards of Subsection 816.116(d) be met for five consecutive years. They contended that the important point is that cover be satisfactory when evaluated after five full years from the last complete reseeding effort. The Office concurs that a critical point exists at the time of release but to control erosion, it is equally important that the ground cover requirements be maintained throughout the 5 year responsibility period. Therefore, no change was made.

16. A number of commenters suggested that the ground cover requirements of Subsection 816.116(d)(2) were not adequate to control erosion. The commenter's recommendations varied from 70–90 percent. Since one of the primary purposes of vegetative cover is to stabilize the soil surface with respect to erosion, this suggestion was accepted and the ground cover requirements raised from 50 to 70 percent. This will allow adequate area adjacent to tree seeding that is competition free. This competition free space is necessary for trees to survive and grow. This final determination of ground cover was based on USDA, Soil Conservation Service Technical Release No. 51 (Rev. 2), that indicates there would be about ¼ less soil erosion with 70 percent ground cover than with 50 percent ground cover. This minimum percent ground cover in paragraphs (1) and (2), does not preclude the regulatory authority requiring a higher percentage when determined necessary to correct specific erosion problems.

17. Commenters suggested that because the term "steep slope" was used in Subsection 816.116(d)(2), it should be defined. Since "steep slope" is defined in Section 701.5, it does not need defining in this Section of the regulations. Further, it was suggested that the definitions for herbaceous species and ground cover, be included in the definitions in Section 701.5. Since these terms have special application to this Section they are retained in this Section.

18. A commenter suggested the phrase "grass like plants" should be a part of the definition of herbaceous in Section 816.116(d)(3). The Resource Conservation Glossary, Soil Conservation Society of America, 1976, p. 25g, defines grasslike plants as a "plant that resembles true grasses, for example, sedges and rushes, but is taxonomically different." These species occur in small amounts in some plant communities. However, the Office also recognizes that the frequency of occurrence of grasslike plants on a site may be due to use or abuse of the original vegetation of the site. Thus, the occurrence of grasslike plants on most properly managed sites would be undesirable and the Office has rejected the suggestion.

§ 816.117 Revegetation: Tree and shrub stocking for forest land.

Section 816.117 sets standards for reforestation. The Section establishes criteria for determining stocking of commercial and non-commercial tree species and shrubs or half-shrubs. The tree or shrub must have been in place for two years, be alive and healthy and have at least one third of its length in live crown to be countable toward the degree of stocking. When multiple stems resulting from root crown or root sprouts occur only the tallest stem that is over one foot high is countable toward the number of stems per unit area.

To express the characteristics of a woody plant community, the term "stocking" was adopted since it is widely used and is a generally accepted term to describe the number of woody plants or stems per unit area.

Two general woody plant forms are usually recognized in a forest ecosystem. These are trees, commercial and non-commercial species, and shrubs which include the half-shrubs. Each should have separate stocking standards that recognize their respective biological and ecological requirements; therefore, the stocking standards are based on life form rather than geographical regions. This will allow for the use of trees and shrubs on all disturbed land as a logical revegetation alternative for the approved postmining land use. The recognition of the two woody plant forms will provide an opportunity to develop a more diverse plant community without interfering with the postmining land use objectives.

Section 816.117(b) sets forth the minimum performance standards for areas where commercial forest land is the approved postmining land use. These standards require a minimum stocking of 450 trees or shrubs per acre. In addition, seventy-five percent of the countable trees or shrubs must be of commerical species. Ground cover on commercial forestland is to be determined in accordance with Section 816.116(b)(3)(iv). The five or 10 year period of responsibility shall begin when the ground cover is 70 percent of the ground cover of the reference area with 90 percent statistical confidence or when the regulatory authority determines that the ground cover is adequate to control erosion and when the stocking is equal to or greater than 450 trees and shrubs per acre. The operator is required at the end of the responsibility period to provide documentation showing that the standards for stocking of trees and shrubs and groundcover have been accomplished on the revegetated area.

The minimum stocking standards for commercial tree species were adopted to recognize variances in proven reforestation practices and they provide an acceptable minimum standard for eastern and western conditions. The regulatory authority is encouraged to increase the stocking rate when local and regional reforestation practices indicate that an increase is desirable. Permitting the use of shrubs would improve species diversity, enhance wildlife habitat and provide for the use of nitrogen fixing nurse crops for the commercial species.

The ground cover requirement is intended to reduce excessive competition for woody plant seedlings since ground cover is the logical criterion for assessing potential competition. Vogel, 1973, p. 204, states that "herbaceous vegetation covering 70 percent or more of the ground will strongly compete with trees planted at the same time." Thus, the reduction in ground cover is appropriate to mitigate the effects of competition on woody plant survival and growth; however, the ground cover must be adequate to control erosion.

The minimum standards for areas where woody plants are used for wildlife management, recreation, shelter belts or forest uses other than commercial forestland are set forth in Section 816.117(c). An inventory of trees, half shrubs and shrubs is to be conducted on a reference area, and the reclamation stocking and ground cover must approximate those of the reference area. Additionally, local and regional recommendations regarding species composition, spacing and planting arrangements are to be used, and tree and shrub stocking is to be equal to or greater than 90 percent of the stocking of woody plants of the same life form on the reference area. When the stocking requirements are met and acceptable ground cover is achieved, the five or 10 year responsibility period shall begin. Upon expiration of the responsibility period, the permittee must provide documentation showing that the stocking is equal to or greater than 90 percent of the reference area with 80 percent statistical confidence and that the ground cover on the revegetated area satisfies Section 816.117(b)(3)(iv).

The reference area is to be used to determine vegetative composition of the area prior to mining. This information will enable the regulatory authority to determine the extent to which the postmining land use will improve the area. The reduced ground cover requirement, compared to that contained in Section 816.116(b)(3), recognizes the need to reduce competition from herbaceous species when establishing trees and shrubs.

1. Several reviewers expressed concern that the introductory paragraph to Section 816.117 implied that the Section was restricted to commercial tree species. Since the Act specifies the establishment of a diverse effective permanent vegetative cover of the same seasonal variety native to the area, this Section actually applies to all woody plants, commercial tree species, noncommercial tree species, shrubs and half-shrubs. These comments suggest the introductory paragraph specifically identify the scope of Section 816.117. Differences in the biological and ecological requirements for species within the woody plant life forms preclude the use of one set of standards for assessing woody plant success. Therefore, a set of standards was developed for commercial tree species and one for the noncommercial tree species, shrubs and half-shrubs. The Section was revised to satisfy these comments.

2. In response to a commenter, the term "stocking," (the number of plants per unit area), was adopted as the measure to determine woody plant success. This term is comparable to the point count used in the California Forest Practices Act and similar Acts in Washington and Oregon. The criteria for identifying individual trees or shrubs to count as one toward meeting the stocking requirements are retained in Section 816.117(a).

3. Section 816.117(b) applies to those areas planted with commercial tree species. These are species recommended by local and regional reforestation practices to provide at maturity specific wood products. Several commenters recommended a minimum stocking of

400 to 450 trees per acre. The Office believes that 450 trees per acre will provide sufficient flexibility to satisfy most recommended reforestation practices and allow the regulatory authority to increase the number of trees per acre when local reforestation practices warrant increasing the number. Local and regional reforestation practices which are regularly used to achieve specific forest management objectives vary in the recommended number of trees per acre. Public comments indicated minimum stocking of 450 trees per acre would be appropriate nationally. Therefore, there is no need to limit this Section to areas west of the 100th meridian.

4. A few comments relating to stocking advocated planting species of trees and shrubs useful for wildlife habitat with the commercial tree species. This would increase species diversity and provide opportunities for multiple use situations of the site. Since no specific number or percentage was proposed, a limit of 25 percent of the average stocking per acre was set. This percentage would provide about 400 trees of commercial tree species per acre which is the lowest stocking limit proposed by the commenters.

5. A commenter proposed deleting the phrase "to achieve 90 percent statistical confidence for tree stocking when determining the beginning of the five to 10 year responsibility period." This was adopted because there will be adequate control over stocking at the end of the five to 10 year responsibility period.

6. Comments were made about the lack of standards to assess the adequacy of herbaceous ground covers used with woody plants. The standards for other postmining land uses require a ground cover that often reduces tree or shrub survival and growth. Reducing ground cover to a minimum that provides adequate erosion protection will favor tree survival and growth. Section 816.116(b)(3)(iv) has been adopted in response to these comments. The rationale for these standards is contained in the part of the preamble relating to Section 816.116(b)(3)(iv).

7. Subsections 816.117(c)(1)(2) and (3) apply to areas where commercial tree species, non-commercial tree species, shrubs and half-shrubs are used for wildlife habitat, shelter belts and other forest use. Reference areas are used to assess vegetation success since they will describe natural distributions of species, proportional distribution by life forms and woody plant stocking. Standards for success of ground cover in Section 816.116(b)(3)(iv) will apply. The objective is to approximate species diversity, seasonal variety and regenerative capacity at least equal in extent to the natural vegetation of the area.

8. A commenter stated that a forested area when deforested, will result in a loss of biomass which requires many years for replacment. This is recognized. The regulations have a self-regenerative requirement for vegetation and the operator is held liable until the regulatory authority is satisfied that the status required by the regulations is achieved. When this is achieved, as in successful reforestation activities, the vegetation will continue to increase and the former biomass will be achieved in the future. No change in this section was needed, therefore.

§§ 816.131 and 816.132 Cessation of operations.

These Sections require persons conducting surface mining activities who cease operations on either a temporary or permanent basis to eliminate safety hazards and assure environmental protection, including erosion control and mitigation of visual degradation. Authority for these Sections is found in the Act in Sections 102, 201, 501, 503, 504, 509, 510, and 515.

Section 816.131(a) specifies that in the event of temporary shutdown, surface facilities, including such items as equipment and storage facilities, that are in areas where mining has not yet commenced, shall be secured to insure against hazard to the public health and safety and to the environment. One commenter suggested that operations should be allowed to temporarily cease as a result of unforeseen circumstances without closing all surface access to underground operations, and that no notice to the regulatory authority of temporary cessation be submitted. Section 816 applies only to surface mining and the phrase "and close all surface access opening to underground operations" was deleted as inapplicable, since underground mines are regulated by Section 817.131. However, under paragraph 816.131(b), notification may be required since it will assist in enforcement administration and will enable the regulatory authority to evaluate closure plans in a timely manner.

Under Section 816.131(b), the operator is required to advise the regulatory authority of his intentions to temporarily cease operations. The operator shall include in his cessation plans: the total acres that will have been affected, kind of reclamation to be done prior to cessation and identification of those activities that will continue during the temporary cessation. One commenter contended that identifying the activities which will continue during the temporary cessation is unnecessary. However, Section 101(e) of the Act states that one purpose of the Act is to minimize, so far as practical, the adverse environmental effects of mining operations. The provision in Section 816.131(b) would assure notification to the regulatory authority of those activities which would protect or improve the environment and assure that the provisions of this Section were being met. It also would give the regulatory authority the opportunity to modify the plan if different measures were appropriate.

Several commenters suggested revising Section 816.131(b) by defining the temporary cessation of operations in terms of time (planned vs. unplanned) as well as deletion of the statement of activities that will continue during a temporary cessation. The adverse environmental effects from an operation during temporary cessation of operation would be essentially the same regardless of the fact that the cessation was planned or unplanned. However, due to the nature of surface mining, adverse weather, labor disputes, and the coal market itself, temporary cessation of mining is relatively common. Many of these temporary cessations are brief, often a week or less. To eliminate relatively unproductive paperwork, which would be both time-consuming and expensive and would place a large burden on the regulatory authority, the phrase "for a period of 30 days or more or as soon as it is known that a temporary cessation will extend beyond 30 days" was added to 816.131(b). OSM believes that in most cases regulatory authorities may find it difficult to respond to conditions in a meaningful way in less than 30 days. The plan which must be provided will assure that environmental protection measures necessary under the permit will continue or that appropriate alternative measures have been brought to the regulatory authority's attention. This will facilitate meaningful evaluation of the closure measures and permit their modification if necessary.

Section 816.132(a) defines the operations which must be completed when permanent cessation of surface mining activities occurs. In order to fulfill the purposes of the Act under Section 102, which basically are the protection of public health and safety and environment, complete reclamation is mandatory when an operation ceases. Additionally, this may deter an operator from abandonment of the site, since abandonment without proper reclamation would constitute violation of the performance standards and could lead to bond forfeiture.

A commenter suggested changing the language of 816.132(a) by deleting the word "permanently" from the phrase "or otherwise permanently reclaim all affected areas." The statute sets performance standards that require affected areas to be reclaimed.

The word "permanently" doesn't imply that the area cannot be redisturbed in a future mining operation, only that the reclamation operations on the site are completed in a manner as to be permanent if no further disturbances occur. Utilizing the word "permanent" would not eliminate the possibility of redisturbing the area in order to facilitate future mining, although under 816.59 this is not encouraged. Accordingly, the suggested deletion was not made.

Under Section 816.132(b), removal of facilities and reclamation of affected land when cessation of mining occurs is mandatory. Exceptions will be granted for facilities required for environmental monitoring or suitable for the post-mining land use. This provision insures the public safety and environmental protection as required under Section 102 of the Act.

Several commenters felt the need to change the language of 816.132(b) as proposed. They felt if the surface mining activities are to cease permanently, there should be no further surface mining activities and, therefore, no equipment should be left on the site for continued surface mining activities. Based on these comments, the provision was changed to delete retention of equipment for "continued surface mining activities," since OSM does not wish there to be any ambiguity. This Section applies at the end of all operations at the site, and not between mining phases, which is covered by Section 816.131.

§ 816.133 Postmining land use.

This Section sets forth criteria and procedures for use by the regulatory authority in determining premining use of the affected area and approving postmining land uses which are different from premining uses.

Section 816.133 is divided into three subparts. Paragraph (a) sets forth the general requirement that the affected area shall be restored to conditions capable of supporting the premining use or an alternative better or higher use. Paragraph (b) sets forth criteria for determining premining use, and Paragraph (c) sets forth the criteria for approval by the regulatory authority of alternative postmining uses. As stated in the definition Section (Section 701.5), any change of land use or uses from one of the defined land use categories to another constitutes an alternative use which is subject to regulatory authority approval under Section 816.133 or 817.133. The criteria in this Section reflect Congressional recognition that, while surface coal mining operations are normally a temporary use of the land, it was necessary to ensure that the affected area be returned to a form and productivity at least equal to that of the land's premining condition, and that the postmining condition be consistent with the surrounding landscape and not contribute to environmental deterioration. (H. Rept. 95-218, 95th Cong., 1st Sess. 93 (1977)). It also was the intent of Congress to require submission of sufficient information in order to evaluate an operator's plan and ability to achieve the postmining land use. (*Id.*) These goals are intended to be accomplished under this Section together with other Sections which require that certain information necessary for land use decisions be included in the permit application (Sections 779.22 and 780.23, for example). Under this Section, alternative postmining land uses may be approved by the regulatory authority when they are found to be higher or better uses when compared to the premining use in situations where the land will be returned to approximate original contour; or an industrial, commercial, agricultural, residential, or public facility (including recreational facilities) postmining land use will be developed under a mountaintop removal variance from approximate original contour pursuant to Sections 785.16 and 824.11; or an industrial, commercial, residential or public use (including recreational facilities) postmining land use will be developed under a steep slope variance from approximate original contour pursuant to Sections 785.16 and 826.15. The Office considers the criteria for identification and achievement of postmining land uses to be essential for achieving the purposes of the Act, and for enabling the regulatory authority to judge proposals as reasonably achievable and consistent with land uses and planning in the surrounding area. (Sections 515(c)(3)(B) and (C) of the Act).

Authority for Section 816.133 is found in Sections 102, 201, 501, 503, 504, 508 and 515 of the Act.

The following technical literature was considered in developing this section.

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1. A commenter suggested that proposed Section 816.133 tended to de-emphasize the multiple use concept of land restoration, in part, because the land use definitions have been moved from Section 715.13 of the initial regulations (42 Fed. Reg. 62,681, December 13, 1977) to the definitions section of the permanent program, Section 701.5. The Office considered adding the concept of multiple use in Section 816.133(a)(1). Multiple land uses are not prohibited by the Act or the permanent regulations. In the absence of a prohibition and since emphasis on multiple benefits from reclaimed lands is already found throughout the regulations (See, for example, Section 816.97 (fish and wildlife habitat) and Sections 816.116–117 (forestry)), the Office believes that it is unnecessary to reword Section 816.133(a) to specifically authorize multiple uses.

2. A few commenters suggested that the "highest and best use" in determining postmining use of land which has been mined and not reclaimed, (Section 816.133(b)(1)), may not be compatible with the back to approximate original contour requirement. One commenter suggested that operators who are reclaiming previously mined areas without governmental assistance should be allowed to apply for a limited variance under proposed Section 826.13 (steep slope mining). The Office considered adding language to clarify that steep slope and mountain top removal variances are available under certain circumstances but believed it unnecessary because this is clearly stated elsewhere in the regulations. Approval of an alternative land use does not itself relieve the operator of the responsibility to return the land to its approximate original contour.

3. A number of commenters objected to the phrases "and has been properly managed" in Section 816.133(b) and "improper management" in Section 816.133(b)(2) because the level of premining management will be difficult to ascertain and because proper management of surrounding lands is undefined in the rules and is also inherently difficult to ascertain. Several commenters questioned whether an operator should be required to return land to a higher level of productivity than existed before any mining. Several commenters suggested adding language which would require the regulatory authority to determine the extent and reversibility of damage to land which may have resulted from mismanagement. The Office considered deleting Section 816.133(b)(2) and the words "properly managed" in Section 816.133(b).

The Act's legislative history makes clear that Congress did not intend for the postmining use of land which had been improperly managed to be limited to its most recent premining use. Congress intended for the postmining use of land to be based on its "potential utility" for a number of uses before mining, not some low use which may have resulted from mismanagement. (S. Rept. 95–128, 95th Cong., 1st Sess. 76–77 (1977)). The Office believes that it is possible to make useful distinctions between land under good and poor management and that the several characteristics of properly and improperly managed lands can be described for most land uses. This information together with the extent and reversibility of damage to improperly managed lands can be determined by the regulatory authority. No changes were made as a result of these comments.

The Office has made two editorial changes to Section 816.133(c). In the introductory Paragraph of Section 816.133(c), the phrase "before permanent abandonment" has been replaced with "prior to the release of lands from the permit area in accordance with Section 807.12(c)." This change is necessary to make it clear that restoration in a timely manner must occur prior to release of the performance bond. Prior to this change, it was unclear when permanent abandonment occurred. The second change occurs in Section 816.133(c)(9)(i) where the Subchapter and Section references for the appropriate performance regulations were added for the convenience of the reader.

4. A few commenters objected to the entire structure of Section 816.133(c) and recommended deleting everything after the first sentence of Paragraph (c). These commenters stated that the criteria and procedures contained in Section 816.133(c) incorrectly incorporated the provisions for obtaining variances from original contour (Sections 515(c) and (e) of the Act).

Paragraphs one through nine of Section 816.133(c) are necessary to ensure that the proposed postmining land use is reasonable, feasible and is planned in accordance with the particular needs of the area. These requirements are based on Sections 515(b)(2), 515(c) and 515(e) of the Act. The Office realizes that the criteria and procedures stated in these three Sections of the Act are not identical. However, the Office believes that the land use concepts stated in these sections of the Act are integrally related and that a composite of these concepts is a reasonable approach to setting forth the regulatory requirements for approval of proposed postmining land uses. As stated in the Preamble to Section 701.5 with respect to the land use definitions, the Office believes that this approach achieves the Act's purpose of maintenance or enhancement of the potential utility of the land for a variety of purposes, ensures consistency in land use decisions, and offers sufficient flexibility to operators and regulatory authorities.

A few commenters suggested that the introductory paragraph of Section 816.133(c) be changed to require approval of the landowner rather than mere consultation. The Office recognizes that regulatory authority approval for a postmining land use which is in conflict with goals of the landowner may present many problems. However, since the additional requirement of landowner approval is not authorized by the Act, these suggestions were rejected and no changes were made.

6. A commenter suggested that the Office promulgate a specific set of factors to be used in determining whether a proposed land use will be compatible with adjacent uses (Section 816.133(c)(1)). Alternatively, the commenter suggested that the Office set out a series of guidelines for use where no local land use plan is in effect.

These alternatives were considered but no change was made in this Section. Compatibility is and has been traditionally determined through planning, zoning and subdivision ordinances at the local and state level (U.S. Dept. of Commerce 1970, pp. 4, 23; Cleckner, E. K. 1969, p. 217 and Spicer, R. B. 1970, p. 1). Inclusion of specific requirements for determining compatibility was rejected as having the potential for undue interference with existing governmental land use functions.

7. A number of commenters suggested that the compatibility requirement of Section 816.133(c)(1) vested an authority in land use planning agencies which such agencies do not ordinarily have. These commenters suggested deleting all of Section 816.133(c)(1) and replacing it with the requirement that the proposed postmining land use not be inconsistent with applicable land use plans and policies. These commenters apparently read Section 816.133(c)(1) as giving local land use planning agencies a veto power in permit determinations. This reading is incorrect. Section 816.133(c) requires that decisions on proposed land use

changes, including compatibility, be made by the regulatory authority. These decisions are made after reviewing the information contained in the application, including review of written views of land use agencies and of any approvals, such as for zoning changes, where an approval is necessary for the proposed use. The Office does not believe that this section as written requires clarification. The land use regulations are intended to supplement rather than create existing land planning capabilities.

8. A few commenters objected to the requirement, Section 816.133(c)(1), that a written statement of the view of governmental planning authorities be filed with the regulatory authority prior to mining. One commenter stated that it will be difficult to secure and file a written statement before mining begins and that filing such a statement would preclude the right of the surface owner to change his or her mind. Others suggested that the regulations should place the burden to comment on the governmental authorities rather than place the burden on the operator to secure the comments. One commenter suggested limiting the period during which state and local authorities may comment to 60 days. All of these suggested alternatives were considered by OSM.

As to the written statement of views of planning authorities, Section 508 clearly states that comments of these authorities must be obtained as part of the permit application, *i.e.*, prior to any mining. To ensure timely response by these authorities, the Office has accepted the comment regarding the 60-day period and has added that language to the regulation.

Regardless of whether a written statement of *views* is received within the 60 days, the regulatory authority is obligated to ensure that any necessary *approvals* (*e.g.*, zoning) are received prior to approving the alternative land use. The Office believes that subsequent changes in the proposed alternative use, whether as a result of the surface owner's desire or otherwise, can be accommodated under other regulations. (See Section 788.11, which provides that the regulatory authority shall periodically review each permit.)

9. A commenter suggested that the written statement of views not be required where changes in agricultural uses are involved because such a statement is not necessary for changes in a type of agricultural use. Section 508(a)(3) requires such a written statement without regard to the type of land use proposed to be achieved. The Office believes that an exception for agricultural uses is, therefore, not permitted by the Act. In situations where land use planning agencies do not have provisions for changes in types of agricultural land use, they may so state in their written views.

10. Several commenters thought that the language of Section 816.133(c)(2) was inconsistent with the requirements of the Act. Specifically, it was suggested that the phrase "as related to needs" be deleted. This suggested alternative was accepted as being more nearly in accord with the Act. "Needs" has thus been deleted from Paragraph 2.

11. A few commenters suggested that the requirement in Section 816.133(c)(3) that "parties other than the person who conducts the surface mining" supply letters of commitment to provide necessary public services is inappropriate in situations where the operator chooses to incur the costs for such facilities. The Office considered revising this Section to allow the operator to supply the letter of commitment to provide public services.

The Office views "public services" as only those services provided to the community by public bodies (*e.g.*, schools, police protection) and not those facilities which are traditionally required to be provided by the site developer (*e.g.*, roads and sewer systems). Viewed in this context, a letter of commitment must necessarily come from a public institution or an organization regulated by such an institution. Therefore, no change was made.

A number of commenters objected to the requirement for a letter of commitment in Section 816.133(c)(4) while a few commenters supported the requirement. Several commenters stated that the requirement was unnecessary because parties other than the operator are usually not involved in the planning and attainment of the use. Others stated that such a requirement obligated the operator to ensure the financial success of the proposed use. The following alternatives were considered in response to those comments: (1) no change; (2) delete the requirement for a letter of financial commitment; (3) change the requirement to a letter of intent; (4) change the requirement to a letter of commitment which must be secured prior to the release of the bond rather than prior to the receipt of the permit; (5) specify that the letter of commitment be required "where appropriate."

The alternative of deleting the requirement is untenable because the Act requires that land use changes must be practicable, involve no unreasonable delay and that investment must be insured. Formal evidence of financial feasibility is the most direct way of meeting these statutory requirements. Similarly, a letter of intent, which is not a legally binding document, will not ensure financial feasibility. The fourth alternative, letter of commitment prior to release of the bond, was rejected based on legislative history which demonstrates that commitments and assurances concerning postmining use must be given prior to issuance of a permit. (H.R. 95-218, 95th Cong., 1st Sess. 94 (1977)). Congress considered financial capability a prerequisite for issuance of a permit. (H. Rept. 95-218, 95th Cong., 1st Sess. 124 (1977)). The fifth alternative, qualifying the letter of commitment requirement with the words "if appropriate" is feasible if "appropriate" is well-defined. In the context of this subparagraph, "if appropriate" excludes only those operators who are going to do both the mining and the development of the postmining land use from obtaining a letter of commitment from third parties. Release of the operator bond, in such instances, will be contingent on fulfillment of the postmining land use obligation.

In these cases, the letter of commitment must still be provided as a part of the permit application but it may be signed by the operator. The Office has determined that the fifth alternative will protect the interests of the public and allow operators the necessary flexibility. Accordingly, the words "if appropriate" have been added to Section 816.133(c)(4).

12. Several commenters suggested that Section 816.133(c) (5) goes beyond the authority of the Act in allowing "other appropriate professionals" to design postmining land uses. A few commenters suggested expanding the language to specifically include landscape architects. The following alternatives were considered: (1) no change; (2) delete reference to "other appropriate professionals"; (3) specifically designate that other professionals may perform certain duties and retain the language of the Act that registered professional engineers perform certain functions. The Act requires that a registered engineer "assure the stability, drainage, and configuration necessary for the intended use of the site." Other professionals will be required depending on the nature of the proposed use. The Office believes that the analysis and development of the postmining plan requires more than merely an assurance of stability, drainage and configuration necessary for the intended use of the land, and will require the assistance of professionals other than the registered engineer. (McHarg, I. L., p. 32). The existing language allows a desirable degree of flexibility and satisfies the statutory requirements of assurance. Therefore, no change was made.

13. A commenter suggested deleting Section 816.133(c) (7) (which requires that the proposed land use not involve unreasonable delays in reclamation) on the basis that the postmining land

use itself constitutes reclamation. The Office considered two alternatives in response to this comment: (1) delete Section 816.133(c) (7), and (2) revise this Paragraph to to clarify possible differences between reclamation (*e.g.*, final grading and revegetation) and the final postmining land use.

Under some circumstances, there may be a substantial amount of time between completion of mining and the ultimate establishment of the proposed use. This rule is designed to ensure that such circumstances do not result in delaying final grading and revegetation necessary to prevent erosion, though this revegetation may not represent final land use. The Office believes that this is necessary to avoid possible adverse environmental harm. Thus, no change in Section 816.133(c) (7) was made.

14. A number of commenters objected to the requirement in Section 816.133(c) (8) that necessary approval of measures to prevent or mitigate adverse effects on fish, wildlife and related environmental values be obtained from "appropriate State and Federal fish and wildlife management agencies." Section 515(c)(3)(D) of the Act allows any State or Federal agency which the regulatory authority determines to have an interest in the proposed use to review and comment within 60 days of notice. The Office believes that fish and wildlife management agencies may have such an interest and should be allowed an opportunity to comment on the plan. This subparagraph has been revised to clarify that approval by the regulatory authority is required but these agencies must be given an opportunity to review and comment on the plan. A 60-day review period has been added as required by the Act.

15. One group of commenters suggested that Section 816.133(c)(9) be entirely deleted. They felt that the requirement for a commitment to assure sufficient crop management after bond release resulted in the operator being held responsible past the limitations of the applicable performance bond and adversely affected the landowners' rights to freely exercise their options for management or use of property. As a result of these comments, the Office considered deleting this requirement but made no change based on the following considerations. The comments are based on the misunderstanding that the operator will be held responsible for crop management after bond release. It is clearly stated in Section 816.133(c)(9)(i) that the commitment may be obtained from the operator, landowner or the land manager, whichever is appropriate. Since the Office expects that postmining land use changes to cropland will occur frequently (Pfleider, E. P., p. 247-250), assurance of crop management, water availability and topsoil quality and depth are necessary to ensure the feasibility of the proposed use as well as to accomplish the Congressional purpose of balancing coal production and protection of agricultural productivity. Such a use may not be clearly feasible if it cannot be maintained after the operator's responsibility is terminated.

§ 816.150-816.176 Roads.

These Sections have been developed to implement the permanent environmental protection performance standards for the design, construction, utilization, maintenance and restoration of roads at surface coal mining and reclamation operations. These regulations are promulgated to ensure that roads at mine operations will not cause adverse environmental effects or damage to public or private property.

Authority for these Sections is found in the Act in Sections 102, 201, 501, 503, 504, and 515 and 701.

The proposed permanent regulations for roads appeared as Sections 816.31 through 816.39 on pages 41881-41883 of the FEDERAL REGISTER on September 18, 1978. OSM has moved and amplified the proposed regulations to permit additional clarity and flexibility and interpretation of the standards to address environmental concerns related to mine roads, on more specific terms than the version proposed on September 18, 1978, in response to the numerous comments received on this subject.

The permanent road regulations incorporate the development of a three-tier road classification system. The definition of each class of road is found in Section 701.5 and is based upon planned volume of traffic, speed and weight of the vehicle used outside the pit area. The reader is referred to the preamble discussion for the definitions of roads in Section 701.5 for an analysis of certain issues relevant to Sections 816.150-816.176.

The order of presentation of performance standards for each road class follows closely the sequence in the proposed regulations; including location, design and construction, drainage, surfacing, maintenance and restoration.

The literature, State laws and regulations, and other materials used in preparing these regulations include the following in addition to those works cited in the preamble Sections above which discuss Sections 816.41-816.57 and in the text below:

1. Pfleider, E. P., editors, 1968, *Surface Mining*, American Institute of Mining Metallurgical and Petroleum Engineers, Inc., New York, 1061 pp.

2. Packer, P. E., 1963, *Criteria for designing and Locating Logging Roads to Control Sediment*, Forest Science, Vol. 13, no. 1, 18 pp.

3. U.S. Forest Service, 1977, *Forest Service General Provisions and Standard Specifications for Construction of Roads and Bridges*. Various paging. (sometimes referred to as the "Forest Service Handbook")

4. Kaufman, W. W., and Ault, J. C., 1977, *Design of Surface Mine Haulage Roads Manual*, U.S. Bureau of Mines Information Circular 8785—68 pp.

5. Weigle, W. K., 1975, *Designing Coal Haul Roads for Good Drainage*, U.S. Forest Service, 23 pp.

6. West Virginia Department of Natural Resources, 1971, surface mining reclamation regulations—Chapter 20-6, Series VII, 37 pp.

7. U.S. Soil Conservation Service, 1975a, Engineering Field Manual For Conservation Practices, U.S. Department of Agriculture, Soil Conservation Service. Various pagings

8. U.S. Forest Service. 1967a. *Construction Specifications for Timber Roads*. U.S. Forest Service. pp 61-2 and 500-1.

9. "Steel Drainage and Highway Construction Products."

10. American Association of State Highway and Traffic Officials (AASHTO), Standard Specifications for Transporting Materials and Methods of Sampling and Testing, 1978s.

11. Linsley, R. K. Hydrology for Engineers. 2d edition, McGraw-Hill, Inc., New York, 482 pp.

12. U.S. Department of Transportation, *Public Roads*, March, 1978, Vol. 41, No. 4, Albert Demillio.

13. AASHTO, T-99.

14. AASHTO, T-180.

15. AASHTO, T-91.

16. Grim and Hill, 1974, Environmental Protection and Surface Mining of Coal.

Many comments were received which stated that the proposed road regulations were too rigid and were not sensitive to varying physical conditions, types of equipment using the roads, the manner in which the road would be used and maintained, and what would be done with the road before and after site abandonment. OSM considered these comments extensively in the development of permanent regulations and performance standards. During the comment review period OSM evaluated the various proposed methods which were suggested for classifying the various types of roads used at surface coal mining and reclamation operations.

For example, one alternative proposed by several commenters suggested classifying roads by vehicular use; such as main haulage roads traveled by a wide variety and sizes of overburden and coal hauling trucks and secondary roads used primarily by ancillary equipment for supervising and

servicing the mine site equipment and facilities. OSM considered that particular classification too restrictive, because many operations throughout the Nation have multiple uses for most roads within the mine plan and permit area, either for access to the mine operation or between various operations and facilities within the total operation, including: exploration areas; mine pit areas; excess spoil disposal sites; preparation plants; coal waste disposal sites; water treatment facilities; office and maintenance areas; and others. Consequently, a larger portion of the roads than necessary would be required to be designed, constructed and maintained to enable usage by the largest hauling trucks in a two category classification system.

One group of comments suggested standards be developed for three classes of roads: haul roads, access roads and ancillary roads. The justification given for the suggestion was that this would reflect differences in [illegible].

At the other end of the spectrum, many comments were received which emphasized that specific road specifications should not be required because local and unique conditions would be dealt with by the operator. The recommendation was to limit the Federal performance standards to generalized guidelines and suggestions which would then serve as the nucleus for the State regulatory authorities to develop standards unique to local conditions. The underlying thrust of comments was that State regulatory authorities should not impair or restrict free thinking by the mine operator, who would be the best judge to finally recommend the best method for road construction, maintenance and reclamation. OSM determined that such general standards, incorporating broad interpretation capabilities, would not be consistent with the intent of the Act or the rest of the regulatory scheme. The legislative history discussed the environmental impacts associated with inadequate road construction and reclamation practices (for example, see H.R. No. 95-218, p. 128). General provisions would not ensure that the environmental concerns would be satisfactorily met, including such concerns as stabilization of surface areas affected by mining from water and air erosion (Section 515(b)(4) of the Act) and ensuring that the construction, maintenance and postmining conditions of access roads into and across the site of operations will control or prevent erosion and siltation, pollution of water, damage to fish and wildlife or their habitat, or public or private property (Section 515(b)(17) of the Act). This recommendation was, therefore, not accepted.

Additional consideration was given by OSM to evaluating the numerous rules, guidelines and specifications for the design, construction, maintenance and reclamation of roads established by Federal agencies, State regulatory authorities and professional construction associations. For example, the U.S. Forest Service and Soil Conservation Service have evaluated erosion problems and stream siltations from logging and farming areas for many years (U.S. Forest Service 1977, and U.S. Soil Conservation Service 1975(a)); MSHA has developed regulations for improving safety on mine roads; State regulatory agencies have developed a wide variety of regulations for the design and use of haul and access roads; and standards for road construction have been developed through ASSHTO. A wide variety of options were available from which to generate a road classification system comprehensive enough to ensure that the environmental mandates of the Act are satisfied, while providing enough flexibility to permit the regulatory authority and the mine operator to consider local conditions and problems. OSM developed a three tiered classification system by synthesizing concepts, practices and techniques for the design and construction, reconstruction, utilization, maintenance and restoration of roads. The final regulations flow from the proposed regulations, and sources mentioned above including the comments received.

OSM concluded that the structure of the proposed regulations was basically sound. Accordingly, the structure of the presentation has been retained. However, OSM felt it should clarify, within the regulations, the range of standards appropriate for different types of roads. OSM considered providing this range in a technical guidance document or in this preamble discussion, but rejected these alternatives on the grounds that they would not be as effective in achieving national similarity of standards or in allowing operators to anticipate regulatory requirements under regulatory programs to be approved under Subchapter C.

The reader should read portions of the preamble of September 18, 1978 which discuss the proposed road rules (43 FEDERAL REGISTER 41739-41740) for a discussion of the bases and purposes of the proposed rules.

A three class road structure was developed to cover every roadway within the affected mine area with an appropriate set of performance standards and design criteria. The most stringent specifications were established for coal transportation (Class I), because of the generally large trucks used to haul coal, the high frequency of trips and the fact that coal hauling exists throughout most of the life of the operation. Associated with these criteria is the fact that competent road design and maintenance must be required to minimize the erosion from the roadway and resultant siltation of adjacent streams, to reduce impact on fish and wildlife habitat and ensure that the stability of the roadway to protect the welfare of the public. In addition to coal haulage, these roads are often utilized by excess spoil haulage trucks and other heavy equipment.

Class II Roads are identified as roads used for purposes other than coal transport, but which will be in service over a six-month period or longer. These roadways experience use similar to Class I Roads except often for different purposes and usually of a lesser volume, weight and frequency of use. These roads would handle such tasks as, but not limited to, haulage to head-of-hollow or valley fills truck disposal of coal processing waste; servicing of major facilities including sedimentation ponds, treatment facilities, office and maintenance areas. These roads require environmental protection standards similar to Class I Roads although modified to reflect that the duration of their use may be shorter and the intensity less. It should be noted that in paragraph 701(28) of the Act a distinction is drawn between roads used for different purposes (there "access" and "haulage").

Class III Roads are roads other than Class I Roads planned to be used less than six-months. These roads would often include those constructed for such uses as exploration.

This classification procedure reflects that variable environmental impacts are to be realized by varying uses of roads and the location of the roadway. OSM believes that flexibility allowed with this three-class road procedure will enable the regulatory authority to consider varying geographic, physiographic and environmental circumstances, while providing appropriate protection to the surrounding natural resources and restoration of those lands affected by the mining operations.

The organization of the regulations for the three types of roads are as follows:

Class I Roads—Sections 816.150-816.156.

Class II Roads—Sections 816.160-816.166.

Class III Roads—Sections 816.170-816.176.

The correlation between the drafted proposed regulation and the revised permanent regulation is shown in the following chart:

PERMANENT REGULATIONS

Subject	Proposed permanent regulations	Class I	Class II	Class III
General	816.31	816.150	816.160	816.170
Location	816.32	816.151	816.161	816.171
Design and Construction (including erosion control)	816.33	816.152	816.162	816.172
Roads: Drainage	816.34	816.153	816.163	816.173
Surfacing	816.35	816.154	816.164	816.174
Maintenance	816.95 [1]	816.155	816.165	816.175
Roads: Restoration	816.38	816.156	816.166	816.176

[1] Also includes: 816.31(a).

The preamble discussion has been organized to permit a discussion of comments received during the public comment period for the proposed regulations and the resultant decisions made by OSM, including accompanying rationale and technical support. The three road class types are discussed simultaneously for ease of comparison. However, when the comments or changes in the regulations related to a specific road class type, that individual comment or change is identified and singularly addressed.

§§ 816.150, 816.160, 816.170 General.

Proposed 30 CFR 816.31(a) would have required that all roads, road rights-of-way, and associated structures to be designed, constructed, utilized and maintained and later restored to control and protect against erosion and siltation, air and water pollution and damage to public or private property. This paragraph was modified to reflect the three road classes, Class I Roads, Class II Roads and Class III Roads, and now appears as subsections 816.150(a), 816.160(a) and 816.170(a), respectively. Direct reference to road rights-of-way and associated structures was deleted since they are incorporated in the definition of roads in 30 CFR 701.5, and the use of these terms here would be redundant.

Paragraph (a)(1) of proposed Section 816.31 would have required that the best technology currently available must be applied to reduce damage to fish and wildlife habitat and to prevent contributions of suspended solids to streamflow or to runoff outside the permit area. This provision now appears as paragraphs 816.150(b), 816.160(b), and 816.170(b).

Proposed paragraph 816.31(a)(2) stated that roads must be removed and the land disturbed reclaimed to the approved postmining landuse unless approval for retention after mining was obtained, maintenance assured and drainage controlled. For Class I Roads and Class II Roads these provisions now appear as paragraphs 816.150(c) and 816.160(c), respectively. Under paragraph 816.170(c), Class III Roads must be completely removed in accordance with 30 CFR 816.176, unless the Class III Road is on the location of a proposed Class I or II Road which will be constructed within six months after the Class III Road is built. Since Class III Roads are, by definition, roads in existence for less than six months, there are no provisions for retention of such roads as part of the post-mining land-use. OSM believes that Class III Road design would present environmental risk over the long term if the road is not maintained or removed. Accordingly, the roadway may only be permanently retained if it is brought up to Class I or Class II standards.

Many comments were received asserting that the draft permanent regulations for road design and construction were too restrictive and did not allow adequate flexibility for site specific conditions to be considered. The proposed regulations established minimal design and construction criteria which the regulatory authority could use to ensure that the provisions of 515(b)(4), (10), (17) and (18) of the Act would be met. The only differences provided were dependent on road life expectancy. The permanent regulations have been expanded to more clearly enable road design and construction to be established based on the proposed use of the road and the volume and size of the equipment using the road, which bears more directly on design needs than mere length of useful life.

Class I Roads, Class II Roads and Class III Roads must now be designed in compliance with the criteria set forth in 30 CFR 816.151–816.156, 30 CFR 816.161–816.166 and 30 CFR 816.171–816.176, respectively. These performance standards are the minimal requirements which must be met to protect the surrounding environmental resources.

Paragraph (d) of Section 816.150 requires the Class I Roads to be designed by registered professional engineers in keeping with the Act's preference for these professionals for design of critical structures and important plans. See Sections 507(b)(14) and 515(b)(10)(B)(ii) of the Act, for example. However, no such requirement is made for Class II and Class III Roads. Since the risks from such roads are less, the added expense may not be justified.

OSM considered various comments which asserted that the rigidity of the proposed regulations would make them unduly burdensome. OSM is convinced that strict compliance with the proposed regulations could, in some cases, have caused more harm to national goals than if no requirement or remedial action were necessary. In the case of existing roads, costs to bring structures immediately into compliance with performance standards (not even design criteria) may be prohibitive in some cases, and operators might, in the extreme case, opt to abandon their mines before a State program is approved. The reader is referred to the preamble discussions of 701.11(e), 780.12 and 786.21, for a discussion of the general applicability of the requirements of 816.150–816.176 to existing roads.

It has been asserted that site-specific terrain may make strict compliance with grade or other requirements result in roads which unnecessarily meander for miles or which involve the movement of inordinate amounts of topsoil, soil and rock materials. OSM believes that appropriate expertise and local knowledge exists in the different States. For example, every State has a road or highway department which is familiar with a wide variety of conditions throughout the State demanding special consideration. In unique situations such as areas highly susceptible to landslides, their guidance and knowledge would prove invaluable.

Accordingly OSM has allowed design flexibility for Class I and Class II Roads when two mandatory requirements are satisfied (Sections 816.150(d)(1) and 816.160(d)(1)). First, the burden of proof for requesting alternative design and construction specifications rests with the operator or permit applicant. It must be shown to the satisfaction of the regulatory authority that the proposed alternative will be as environmentally sound and as structurally stable as the criteria required in the permanent Federal regulatory program. Secondly, OSM has required that the request to employ alternative specifications be certified by a registered professional engineer. This requirement is necessary because the minimum performance standards are established on sound technical knowledge, the support for which is presented in the following discussions. Alternative standards and criteria must be established on similar knowledge.

The request for approval of an alternative should include at a minimum, the necessity of the request, a description of the intended use of the road structure, comparison between the minimal requirements and proposed alternative(s), and the technical criteria supporting the reliability of the new specifications in complying with the minimal environmental performance standards.

Sections 816.150(d)(1), 816.160(d)(1) and 816.170(d) provide that the design of the road must be based on its anticipated use. This provides a criterion

upon which the regulatory authority, the public and OSM can evaluate the design and determine its appropriateness. This criterion does not constitute a separate variance from the specific performance standards which follow, but merely a means of evaluating the specific designs offered as fulfilling those standards.

In addition, § 816.170(d) specifically focuses the attention of the operator and the regulatory authority on the fact that Class III standards are designed for low-usage roadways, and if heavier traffic is anticipated the designs must be upgraded, as appropriate, from the minimum standards of Sections 816.171–816.176.

§ 816.151, 816.161 and 816.171 Location.

These Sections derive from proposed Section 816.32. For clarity, each sentence in the proposed version is now a separate paragraph.

The first sentence of the proposed version required that all roads be located on ridges or the flattest and most stable slopes to minimize erosion, as in OSM's interim program, 30 CFR 715.17(l)(2) (42 FR 62688, December 13, 1977). One comment was received which asserted that the flattest slope within a region may not necessarily be the logical location for a road. The reference to flattest slopes incorporated two concepts; namely, traditional flatter slopes on surface would be underlain by competent rock, such as river benches, suitable for location of highways and railroads and secondly, the intent was to minimize the necessity of excessive road cuts. However, hazardous results could occur if, for example, a flat slope located on a hillside were potentially slide prone. A region characterized by an undulating surface will also contain areas which could be composed of transported materials, rock and soil, and swamps (USFS 1974, Sec. 21.3). Obviously, these deposits would not be regarded as the most stable or competent sites for the location of a road. The stability of rock out-crops and unconsolidated deposits is dependent on the characteristics of the rock or other soil including bearing strength, physical and chemical properties, degree of decomposition, presence of water and other properties (Pfliedler, 1968, pp. 773–779). The siting of a road is extremely important because parent or original land surface including excavation down to competent stratum serves as the subgrade or subbase of the road (USFS, 1974, Sec. 21.83). A stable subbase is fundamental to road design (Kaufman and Ault, 1977, p. 19). OSM has rewritten the language and the final rule eliminates the requirement to use the flattest slopes in all cases and now requires only that roads be located on ridges or the most stable available slopes. All classes of roads in 30 CFR 816.151(a), 30 CFR 816.161(a) and 30 CFR 816.171(a) are to be located on the most stable surfaces. Elimination of the requirement to use the flattest slope may reduce road length in some instances, which will reduce the total area disturbed by the operation.

OSM is not changing the standard for the interim program at this time, because it believes the added siting flexibility in the permanent program presents a low hydrologic risk only because of controls in the permit and bond requirements, which are not part of the interim program. Roads on other than the flattest slope can result in excessive disruption of runoff patterns unless controlled by careful planning and review as required in the permanent program through the permit process.

Paragraph (b) prohibits the location and construction of roads in stream beds or drainage channels to implement Sections 515(b)(18) and 515(b)(10) of the Act. The draft language has been expanded to include intermittent as well as permanent streams to further protect all stream beds and drainage in compliance with the intent of 515(18) of the Act which is clearly not limited to permanent streams. The siting of roads or other travel routes immediately adjacent to or in stream channels may destroy the aquatic life, rutting causes changes in channel ways and downstream channels (USFS, 1977, Sec. 24.48).

Stream fords are prohibited by paragraph (c) unless the regulatory authority approves their use and if the utilization of the ford will satisfy 515(b)(18) of the Act. Subsections 816.151(c) and 816.161(c), for Class I Roads and Class II Roads, respectively, permit fords only on a temporary basis for the construction of an approved structure. OSM recognizes the environmental damage caused by low frequency fording during construction of a bridge or culvert. However, the long-term benefits of the structure outweigh the short-term disturbances to the stream during the short period of construction. Similar standards have been adopted by the U.S. Forest Service (USFS, 1977, Sec. 100.42 and Sec. 22.4). Section 816.171(c) provides that Class III Roads may not ford perennial streams, but may ford ephemeral and intermittent streams providing the fords will not aggravate erosion or increase sediment loads in the streams or have adverse effects on fish and their habitat or other environmental values. Due to the short-term life and low frequency use of Class III Roads as compared to the long-term life and high frequency use of Class I and Class II Roads, OSM believes that fording of intermittent or ephemeral streams by a Class III Road will have minimal environmental degradation. No data to the contrary has been presented to the Office. However, during adverse climatic conditions the Class III Road should be closed, because of the high risk of siltation and erosion. It is the intent of OSM that Class III Roads reduce stream crossing to a minimum by utilizing higher terrain locations such as meandering with the terrain as is the standard in some existing Federal and State programs (USFS, 1977, Sec. 24.3 and Sec. 72.2 and W.Va. DNR, 1971, Secs. 20.6 and 5.09).

Several comments were received which requested clarification of the term "nonflowing stream" which was used in the proposed version of the regulations relating to stream fords. The commenters asserted that this term would severely limit access into mine permit areas. OSM has deleted the use of the term. OSM believes that roadways should be designed and constructed in a manner to prevent deterioration of all streams and associated habitats and to be consistent with the language of other sections of the rules, which use the 3 road classification system. Fording is permitted only on a temporary basis to permit the construction of appropriate structures such as culverts. bridges, etc. Since the term "non-flowing" is not defined in the regulations it has been deleted and the prohibition has been extended to all streams for Class I and Class II Roads and to perennial streams for Class III Roads.

Several commenters asserted that OSM has no statutory authority for prohibiting stream fords. Sections 515(b)(10), (17), (18) and (24) of the Act all authorize this restriction, which represents sound technology to prevent increased sedimentation, control erosion, prevent water pollution, prevent damage to fish and wildlife and their habitat and to prevent serious alteration of streamflow.

One commenter asserted that stream fords might cause less damage than construction of crossings over the stream. However, no data or other technical basis for this assertion was offered. The short-term disturbance caused by stream crossing construction of structures will avoid long-term disturbance of the stream bed. Likewise, such structures eliminate environmental problems caused by adverse weather conditions. Other commenters emphasized their views that stream fords create serious environmental risks. OSM believes that the purposes of the Act are best served by prohibiting stream fords, except as authorized under paragraph (c).

One commenter suggested additional language be added to the proposed rule, to read "All other stream cross-

ings shall be made using bridges, culverts, or other structures designed, constructed, and maintained to meet requirements of this Section and other applicable requirements". The rationale offered for the change was that in certain States, other applicable approvals are required and that this Section does not specifically require the State requirements to be applied. Section 505(b) of the Act ensures that other, more stringent State requirements to meet environmental parameters, are to be construed as consistent with the Act. Because of these provisions in the Act, the additional language was rejected as unnecessary. However, a State program may include specific requirements for showing of compliance with other applicable State laws, so long as such compliance does not authorize or constitute a lower standard of performance than required by these rules.

One commenter objected to the proposed language which became paragraph (d), on the grounds that it would have prohibited construction of roads which increased downstream sedimentation or flooding, which, if literally applied, would have made compliance in many instances impossible. To be consistent with Sections 515(b)(10)(B)(i) of the Act, the language has been changed, and minimization of downstream sedimentation or flooding is the requirement. This in no way is intended to constitute a variance from the requirement that best technology currently available (BTCA) be used to prevent additional contribution of suspended solids to streamflow, or runoff outside the permit area. However, there is a distinction between the requirement to the BTCA and an outright prohibition, and for this reason the language has been changed.

Another commenter requested that the prohibition in the proposed rule be resolved by making it a prohibition against "excessive" sedimentation. This alternative resolution was rejected because of the inexactitude in the term "excessive," which would make uniform enforcement and interpretation difficult.

The proposed requirement not to construct roads that increase erosion, that appeared in the language which became paragraph (d), has also been deleted as redundant, in light of the language in paragraph (a) of 816.150, 816.151, 816.170 and 816.171 and numerous other provisions aimed to achieve this end.

One commenter suggested that the location rules be amended to apply only to newly constructed roads. The applicability of these rules to existing nonconforming structures is covered by Sections 701.11(e), 780.12 and 786.21 of these rules, and the reader is referred to the preamble discussion of those provisions for OSM's disposition of this comment.

One commenter suggested that any haul road crossing major highways be separated from the highway traffic. This would require an operator to construct bridges or other structures to keep haulage traffic separated from the public. OSM did not believe it could place such a financial burden on an operator with limited environmental benefits demonstrated. The burden would be especially heavy in the eastern coal region where the larger number of mines are of short duration. Public roads do receive protection under the Act and these regulations by implementation of regulations banning mining within 100 feet of public roads (Section 761.11(d)).

However, Section 522(e)(4) of the Act clearly contemplates haul roads joining, not crossing over, public roads. Of course, the States can implement stricter controls on haul roads than the minimum standards in these regulations.

30 CFR 816.171(e) requires flagging or stakes for on-site review by the regulatory authority. Precedent for this requirement exists in other Federal and State programs. (West Virginia Department of Natural Resources, 20-6, Section 5.01.) The rationale for having a field location approval of Class III Roads is an attempt to balance the operator's costs in plan submissions and approvals, which can be significant, against environmental protection needs in the case of those temporary roads, with due consideration for citizen participation (Section 102(i) of the Act), inspection by the regulatory authority and protection of the public (Section 102(d) of the Act).

Class III Roads used for exploration of coal, which remove 250 tons or less, will not require approval by the regulatory authority, (Section 512(d) of the Act and 30 CFR Part 776). However, provisions for performance standards apply in accordance with paragraph 512(a)(2) of the Act. The approval as exploratory roads are to be field approved by the regulatory authority in so far as possible.

Since there will be no detailed written plan submission for Class III Roads, 30 CFR 816.171(f) has been added to provide additional criteria for disapproval of the flagged roadway by an inspector if the road in an area is not permitted because it is unstable or where complete restoration cannot be accomplished. Location of roads in such areas is not allowed. This is intended to protect against irreparable environmental damage, particularly with reference to assuring that post-mining conditions will control erosion and siltation, pollution of water, damage to fish or wildlife or their habitat or public or private property. The location of Class III Roads has direct bearing on the level of restoration to be accomplished and this Section should help ensure compliance with Section 816.176.

Paragraph 816.171(g) is intended explicitly to permit temporary roads necessary for the construction of Class I or Class II Roads. Before the roadbed is laid and the major road is used in mining, surveying and construction vehicles must have access to the planned right-of-way. OSM believes this provision is necessary to assure that construction of Class I and Class II Roads might proceed expeditiously.

816.152, 816.162, 816.172 Design and construction.

These Sections contain the provisions which appeared in proposed Section 816.33. Class I and Class II Roads have specific design criteria, while the standards are more general for Class III Roads.

Several commenters wanted a blanket statement in the introduction to this Section which would allow regulatory authorities to adopt or approve other standards. The commenters said the change would allow existing State road standards to be used and would allow for consideration for existing nonconforming structures. The first concern is now taken care of in the "State window" concept of Section 731.13, and the second is covered by the existing structures provision of Sections 701.11(e), 780.12 and 786.21. Accordingly, no change was made here. The reader is referred to the preamble discussion of those other Sections.

Paragraph (a) is concerned with vertical alinement. There are a few coal mining States that allow grades of 20 percent or more for mine roads. The majority of the States, however, have established 15 percent as the maximum grade (Bureau of Mines, 1977). West Virginia does not allow mine haulageways having sustained grades exceeding 10 percent, with maximum grade not to exceed 15 percent for 300 feet. These basically are the gradient requirements for mine roads which were proposed for comment on September 18, 1978, as Section 816.33.

Numerous comments were received suggesting allowance of variances for site-specific conditions on the grade requirements for vertical alignment. Many of these comments were used in developing the new requirements for the three classes of roads which are appropriately based on the volume of traffic and the weight and speed of vehicles using the road. This approach is based, in part, on U.S. Forest Service 1977, Sec. 24; Packer, P. E., 1965 Fig. 1; Kaufman 1977, p. 19. The Class I Road has the same criteria as proposed in

the regulations because its primary use is for coal haulage. The Class I Road standard allows for a 10-percent overall grade with 15-percent pitch grade for 300 feet within any 1,000 feet. Support for this standard is found in Weigle, W. K., 1966, p. 3. Kaufman, W. W. 1977, p. 4; Packer, P. E. 1965 Fig. 1; and West Virginia Department of Natural Resources, 1971 20-6 Section 502. It was recognized that more latitude was needed for local conditions in the case of roads other than coal haul roads, which may be irrregulary used. Therefore the Class II Road allows for a 10-percent overall grade with a 15-percent pitch grade up to 1,000 feet. These numbers are the same as those used for similar roads by the U.S. Forest Service (1977, Sec. 21). See also, West Virginia Department of Natural Resources 1971, Section 5.02(c). The Class III Road allows for a 10-percent overall grade with a 20-percent pitch up to 1,000 feet. See U.S. Forest Service, 1977, Sec. 21, and West Virginia Department of Natural Resources, 1971, Section 5.02(c) which have similar requirements for lightly used roads.

One commenter objected to the use of Kaufman, W. W. and Ault, J. C. 1977, U.S.B. of Mines, Information Circular 8758 because it addresses design criteria from a safety standpoint. However, design from a safety viewpoint and from an environmental protection viewpoint have much in common. OSM believes that to plan a road, it is necessary to know the amount of coal to be mined, the daily haul, and vehicle equipment and practice, along with terrain data and environmental concerns. Such information allows analyses to determine the required design speed and traffic volume. The aim is to know the anticipated volume of traffic to be accommodated. A feasibility analysis then can establish the width, alinement, grade, surfacing, and Road Class to fulfill the environmental protection requirements economically, including providing protection from erosion. Roads incapable of safely handling their traffic are likely to cause environmental damage through surface erosion, embankment failure, streamflow disruption, and similar conditions. Much of the approach in 30 CFR 816.152, 816.162 and 816.172 is similar to that of AASHTO's 1978 Standard Specifications for Transporting Materials and Methods of Sampling and Testing, Part I, Specifications, p. 828; Part II, Methods of Sampling and Testing, p. 998, (9.4D); and in U.S. Forest Service 1977, Sections 24 and 25. Design elements in these publications underpin systems of minimum standards for roads to be used under similar conditions and for similar purposes as mine roads. Any interpretation that safety was the sole criteria for OSM's selection would be incorrect. OSM considered all comments received on roads and based on extensive examples of field performances and engineering techniques generally accepted by the engineering profession, opted to rely heavily on the U.S. Forest Service Handbook, Section 24. This reference contains constraints which a designer for environmental protection goals has to accept, including topography, soil characteristics, land use, environmental characteristics, the design vehicle, and design speed, to meet the objective of holding soil in place on the constructed road and to prevent silt movement into streams.

One commenter suggested there is nothing in the Act which requires arbitrary road grade limitations and suggested substituting a general statement. OSM determined such a broad general statement would not be consistent with the intent of the Act to provide minimum national standards of protection. General provisions would not ensure meeting satisfactorily Section 515(b)(4) and 515(b)(17) of the Act.

Many comments were received suggesting regulatory authority approval for other road grades that are satisfactory to control erosion. Attention was called to existing roads that would be required to be reconstructed to the specified grades. OSM's reconstruction requirements for existing roads are discussed in sections 786.21 and 701.11(e), and the reader is referred to the preamble discussion for those Sections.

Additional consideration was given to evaluating grade requirements based on volume of traffic, speed and weight of vehicles, an approach approved and used by State Departments of Transportation. OSM evaluated the various suggested State requirements. OSM considered these requirements too restrictive because of site specific mine needs are not incorporated in existing State Transportation Department rules and procedures. In part as a result of this analysis, a national three class road system was evolved, with standards for each road class and, where appropriate, allowing the regulatory authority site specific exceptions when it is demonstrated by a qualified engineer that there would be compliance with environmental standards. OSM's three class road system incorporates rules, guidelines and specifications from time tested Federal and State agencies. See, for example, West Virginia Department of Natural Resources, 1971, 20–6, Section 502; Packer P.E. 1965; U.S. Forest Service 1977; Kentucky Department of Natural Resorces 1974. Section 350.151.

Some commenters recommended the road grade standards provide no more than a general requirement that roads be "designed, constructed, and maintained in a manner which will do the lesser damage to the environment and tend to control erosion and disturbance of the hydrologic balance." These commenters argued there is nothing in the Act which permits arbitrary road grade limitations. The greatest single destructive factor in road construction and maintenance is water (U.S. Forest Service, Section 24.4). OSM's evaluation determined the ability of water to erode soil and transport sediment is an exponential relationship with increases in slope of the road. Rates of erosion are greater on steeper grades than on flatter grades. Overland flow velocities are also greater in steep grades and mass movements are more likely to occur in steep grades. (Linsley, Ray K., 1975, p. 401.) Accordingly, specific grade limits have been included.

One commenter suggested the overall maximum grade be increased from 10 to 12 percent. The rationale was that there would be less disturbed earthwork and reduced discharge of particulate matter into streams. OSM evaluated the two percent difference although the commenter had not provided supportive facts. The proposal was not accepted. OSM recognizes that although less land might be disturbed, the increased erosion and sedimentation potential during major storm events was considered to outweigh the benefit of less disturbed area. OSM believes the three class road system provides environmental protection with the flexibility and economic benefits the commenter requested.

One commenter suggested deleting entirely the specific vertical alinement and overall grade requirement on the grounds that when erosional control specifications are met, there is no need for these limitations. Sound engineering design recognizes a balance between vertical and horizontal alinement to enhance erosion control, streamline drainage control and generally provide a more economic location. (U.S. Forest Service, 1977, Section 24.11 and 24.3.) OSM evaluated the standard and noted that the comment had not provided supportive data to demonstrate erosion control specifications which would assure the water quality standards in 30 CFR 816.42 and 816.45 would be met. Design criteria are appropriate to assure achievement of performance standards (see *In Re Surface Mining Litigation*, 452 F. Supp. 327, D.D.C., 1978). Accordingly, OSM determined that the requested deletion would not be consistent with Section 515(b)(10) and 515(b)(17) of the Act or the rules as enacted.

Several commenters proposed deletion of the entire road construction and vertical alinement Sections on the grounds that they would result in increased length of road, additional cuts, switchbacks, and drainage facilities, with greater environmental impact, poorer safety potential, and increased costs. OSM determined that deleting this basic requirement would not be consistent with the intent of Congress or Sections 515(b)(10)(17), (21) or (22) of the Act. Environmental protection requires minimum standards for road construction. The legislative history of the Act recognized the continuing and long standing environmental problems that roads present and mandates a shift from past practices. The legislative history recognized that roads designed and constructed under appropriate standards assure that environmental objectives are met. Therefore, OSM rejected this proposal to delete the road construction and vertical alinement Sections.

Several commenters urged the regulatory authority be granted the right to allow higher road grades. OSM evaluated this proposal and believes that the three class road system fulfills the intent of the recommendation while assuring that a "loophole" in not created. OSM also believes requiring that the design and construction or reconstruction be certified or approved by professional engineers and the opportunity to use alternative specifications provides flexibility and still provide protection from erosion.

Some commenters recommended different alinement requirements for non-coal haulage vehicles and temporary roads used by four-wheel-drive vehicles. OSM evaluated the suggestion in terms of protection from potential erosion and meeting water quality standards in 30 CFR 816.42 and 816.45. The comments were taken into account in developing the alinement standards for Class II Roads 30 CFR 816.162(a) and 817.162(a) and Class III Roads 30 CFR 816.172(a) and 817.172(a). One commenter recommended substituting the word "profile" for vertical alinement. Both terms may be used by engineers and the term "vertical" is more clear. Design standards and elements in U.S. Forest Service 1977, Sections 24.11, 24.2, and 24.3 utilize the term vertical as a national guide for qualified design engineers. OSM considered both terms and selected vertical alinement.

§§ 816.152(b), 816.162(b) Horizontal alinement.

As a result of comments received, OSM evaluated the various proposals for horizontal alinement. One comment suggested greater latitude for determining solutions to localized road problems. The proper balance of horizontal and vertical alinement is the very backbone of road design, provides erosion control, simplifies drainage design, reduces encroachment on perennial stream channels, and in most instances decreases the required length of a bridge span, encourages a uniform desired speed, improves esthetics of the route, and generally maximizes economic safety and environmental results. As proposed, the rules did not include the standard engineering practice of horizontal alinement. The U.S. Forest Service, which contracts for or supervises 10,000 miles of new road construction each year, requires that horizontal alinement be considered concurrently with vertical alinement, earthwork requirements, and job management. (U.S. Forest Service 1977, Sections 24.11 and 24.3.) Class I and Class II roads have similar volumes of traffic, speed, and weight of vehicle standards as the multi-purpose roads subject to USFS requirements. OSM evaluated the alinement standards and noted that roads built to these standards, when adequately maintained result in a road system meeting environmental and esthetic requirements. OSM feels the alinement requirement will enable the regulatory authority to consider varying site specific environmental requirements while providing appropriate protection to natural resources.

§§ 816.152(c), 816.162(c), 816.172(c) Road cuts.

These paragraphs set forth requirements for slope cuts which result from road construction.

Some commenters felt that the proposed 1.5 safety factor for road cuts was excessively strict. The Office recognizes that geotechnical analyses used to demonstrate stability encompass a wide range of considerations with broad confidence limits. Other geotechnical analyses with supporting documentation can be used that would ensure embankment stability. OSM believes that for Class I and II Roads, it would be technically unsound for the regulatory authority to authorize a lower safety factor under §§ 816.150(d)(1) or 816.160(d)(1) without clear documentation that the planned volume of traffic, speed and weight of vehicles used in the design would be far below that for normal coal mine roads. U.S. Forest Service, Section 24.26, recognizes the limits of the geotechnical analyses used in a laboratory, and does not intend that in all cases areas that do not meet the 1.5 safety factor design criteria be considered unsuitable. However, the stability of the cuts must be demonstrated so that no significant environmental harm, or harm to the public health and safety will result. For Class III Roads there is no designed safety factor, because of low volumes of embankment material and low traffic volume ratios.

A comment was received requesting that the term "unconsolidated material" in paragraphs 816.152(c) and 816.162(c) be clearly defined. OSM believes that any number of arbitrary limits could be established for this term. However, OSM takes the position that appropriate latitude should be exercised to account for unusual field conditions which may be encountered. When determining the required slope angle in road cuts, consideration must be given to the rock or soil material. A road cut may expose a sandstone which is highly friable or weathered, in which case, a lesser slope would be required to ensure the stability of the slope. No definition has been suggested to OSM. Several of the addressed comments immediately below under road embankments also apply to road cuts, as noted.

§§ 816.152(d), 816.162(d) and 816.172(d) Road embankments.

These Sections derive from proposed Section 816.33(c).

Two commenters suggested that the embankment standards, as well as the road cut standards, be deleted, on the grounds that the design criteria had no relation to the environmental standards that are to be met. They argued the criteria would result in a higher cost road that might reduce maintenance cost but would provide no environmental protection. OSM believes that assurance that the performance standards will be met is best provided by requiring minimum designed criteria, and therefore the commenters suggestions were rejected. (U.S. Forest Service, 1977 and Pflieder on S.W., 1968, Chapter 9, 12 and 13.1-3 on p. 830.)

The Office does not agree that the proposed design criteria of these Sections are not related to erosion and sediment control. These requirements are provided to ensure embankment stability in general, thus reducing erosion or mass wasting of fills and subsequent sedimentation of nearby streams. The Office further believes that although the required design criteria requirements provide sufficient flexibility for the regulatory authority to meet local, unique or unusual situation, it may permit the operator to further "tailor" the road construction to local environmental conditions.

Some commenters suggested explicitly providing that the embankment requirements apply unless a different requirement is approved by the regulatory authority. Other commenters advocated that each State use design criteria identical to that required by their respective transportation departments. Because of the need for general

national performance standards, OSM has responded to these commenters concerns by development of a three-class road system with standards for each class, and allowing the regulatory authority for site specific exception where equal results are demonstrated by a qualified engineer. More stringent statewide criteria will be allowed under Subchapter C relating to approval of State programs.

Several comments were received with respect to the proposed limitation of road cut and embankment standards to roads which would be in place and in use for more than five years. The States of Kentucky and North Dakota proposed changes to this limitation, to provide the regulatory authority the ability to enforce these requirements on roads that are to be maintained for a period of less than five years. These two States argued that by having the requirement for roads in place less than 5 years will ensure stabilized and maintainable roads; and thus better protect the existing hydrologic balance.

One commenter recommended that the road embankment rules should apply in all instances where the regulatory authority considers it advisable or necessary. This commenter stated that simply applying the proposed duration of use standard would be too inflexible. The commenter recommended the regulatory authority should be given more discretion to determine the need for applying construction criteria.

OSM considered these comments and determined that volume of traffic, designed speed, and weight of vehicles provide a more sensitive index to control erosion. OSM's assessment is that the ability of water to erode soil and transport sediment sharply increases with the slope of the road and this, together with consideration of the comments and the addition of design flexibility in the revised road regulations, provided the basis for altering the 5 year criteria (Packer, P.E. 1965, Fig. 1). The coal haul road, or other heavily travelled roads no matter how long in place, creates such a risk of environmental degradation, through erosion, slope failure and pollution, that the construction requirements must always apply. These requirements are not deemed to be overly burdensome and will present a high degree of environmental protection. Other national road standards (e.g., U.S. Forest Service, 1977, Section 20), similar to these apply to heavily traveled roads, no matter how briefly in place.

A maximum time limit of six months was established on a Class III Road because adverse environmental impacts of temporary roads has been shown to be controllable with minimal design criteria. The criteria is based upon the limited traffic volume during the period. All longer-term roads, with their anticipated heavier traffic volume, must meet design criteria specified under paragraphs (c) and (d), or have alternative designs approved under the strict standards of 816.150 and 816.160.

Some comments were received questioning the requirements for keying all embankments to be placed on sideslopes greater than 1v: 5h (20 percent). The technique of keying was primarily intended for embankment in rock, so the phrase "or if in rock" was added for clarification in Class I and II Roads in meeting requirements similar to those which led Congress to enact Section 515(b)(22)(F) in the Act. The keying requirement is less stringent for Class II than for Class I roads, based on anticipated usage of the roads.

A comment on the same Section stating proper foundation preparation does not ensure stability but increases it. OSM agrees with this observation and has substituted "increases" for "ensure". The provision now more closely parallels U.S. Forest Service 1977, Section 203.13.

Many comments were received which expressed concern over the rigid 24-inch lift restriction proposed for road embankments. The comments recommended that greater flexibility be permitted to handle site-specific conditions and that a maximum lift thickness of four feet be inserted instead of the 24-inch lift proposed on September 18, 1978. OSM originally established the 24-inch lift as being a representative maximum size utilized in the thousands of haul and access road embankments throughout Appalachia, which were constructed by dozing road cut and fill structures.

Consequently, many embankments were composed of soil, weathered rock, soft shale and a portion of competent rock. Construction of embankments with these materials in several States (Kentucky, for one) must be on 12-inch lifts. OSM recognizes that embankments constructed of pit rock will contain rocks of variable size.

In embankments constructed of rock, lifts with a maximum vertical height of 36 inches will be permitted by these final rules with the final layers of the subgrade conforming to the 12-inch thickness requirement. Such requirements have been adopted without any serious problems by the U.S. Forest Service and many State highway departments, and are considered standard construction practice throughout the road building industry. OSM has revised the standard to allow a vertical lift of 36-inches where necessary for Class I and II Roads. OSM has not established lift standards for Class III Roads due to construction procedures and the appropriate performance standards for low traffic volume ratios. (U.S. Forest Service, 1977 (Sec. 203.13(b)).

One commenter suggested that the term "nesting" in the proposed paragraph (d) be defined with respect to rock, because the term is not standard engineering or mining terminology. OSM has deleted reference to the word "nesting" by changing the wording in Sections 816.152(d)(4) and 816.162(d)(4) to read that "void, pockets, and bridging will be reduced to a minimum."

There were several comments objecting to the requirements of proposed 816.33(c)(5) specifying a method for compacting material in an embankment. OSM believes that in the majority of mine roads being constructed, the compaction provided would be with the hauling and leveling equipment used in the actual construction, and therefore retained the basic terminology as proposed. However, OSM recognizes that there should be flexibility to allow for an alternative method and took this into account in 816.150(d) and 816.160(d). Where the design engineer demonstrates an alternative method of compaction resulting in equal or better performance, the method may be allowed by the regulatory authority. For analogous provisions, see U.S. Forest Service 1977, Section 203.13.

Some commenters objected to the word "horizontal" in reference to lifts, stating it is an unworkable condition to require a horizontal lift placement on a vertical road grade. OSM recognizes that it would be impossible to have a horizontal lift on grades greater than 3 percent and has changed the language to read for Class I and II Roads "spread in successive uniform layers . . ."

Many commenters recommended total deletion of provisions of the proposed regulations which specified that successive lifts not be placed upon the previous lift until that lift achieved a minimum density of 90 percent of maximum dry density according to ASSHTO requirements. The majority of the concerns centered on the variability of the soil or rock type which would be available for use as an embankment fill. It was asserted that fill material consisting of large, blocky rock such as a competent sandstone or limestone could not be tested by the proposed AASHTO T-99 procedures. OSM believes that it was essential that embankment material be placed at near maximum density to ensure stability and to minimize erosion and run-off regardless of proposed road use. Many embankments will be constructed of material excavated from adjacent road cuts. However, some large fills will be built of overburden

removed at the mine site. Material from road cuts depending upon the depth of cut, availability and quantity of water and the rock type will, in part, be decomposed and the overburden material may consist of a shale or friable sandstone.

The presence of water may serve as a catalyst to decompose the fill material to a clay, or sand-sized, unconsolidated collection of particles. Excess water and the application of additional weight or vibration by moving equipment could aggravate the soil pressure within the fill causing structural failure. (U.S. Dept. of Transportation, Public Roads, March 1978, Vol. 41 No. 4, Albert Demillio). It is the intention of OSM to reduce the advent of embankment failure. Several commenters suggested that OSM consider the ramification of applying the ASSHTO T-99 procedures for density determinations on bulky material such as sandstone or limestone. T-99 procedures would not be applicable in these situations. Because additional requirements are necessary to provide appropriate and reasonable evaluation of fill density, OSM has modified this subsection to address fill density requirements for each class of road. The compaction of each embankment layer for Class I Roads must be adequate to support the projected volume and weight of the traffic. Specific density requirements have been deleted. The operator, however, must give appropriate consideration to the listed design and construction factors and must apply the appropriate density tests for the predominate rock material used during construction. (See Kaufman, 1977, and USFS, 1977, Sections 33.63(1)(c), 33.63(1)(d) and 203.13 for comparable requirements). Compaction of Class II Roads is required until no visible horizontal movement of the material is apparent. Class III Roads embankment must be competent to control erosion.

Many commenters objected to the proposed provision limiting the placing of material in an embankment only when its moisture content is within four percent of the optimum. OSM recognized that it is possible to achieve maximum compaction and be outside the four percent optimum range. Section 816.152(d)(7) was modified to ensure embankment material would be placed only when its moisture content is within acceptable levels, to meet the designed compaction standards. (U.S. Forest Service, 1977, Sections 203.13 and 25.31(c)).

Some commenters objected to proposed 816.33(c)(8), stating embankments could be constructed with slopes steeper than 50 percent and still maintain the required factor of safety. (U.S. Forest Service, 1977, Sections 24.26, and 33.63(1)(c)). Section 816.152(d)(8) has been revised to reflect OSM's agreement with these comments for Class I and II Roads. Stability is still required, although unjustified rigidity of the standard has been relaxed. No embankment slope limitations are proposed for Class III Road because of permitted side-casting, low volume of embankment material and low traffic-volume ratios. (U.S. Forest Service, 1977, Sections 203.13).

816.152(d)(10), 816.162(d)(10).

Crowning is necessary to prevent surface ponding, to provide erosion control, and road surface and embankment stability, to minimize the need for ditches and cross drains, and to simplify maintenance.

Some comments objected to crowning or insloping a road to a drainage ditch. Others objected to a ½-inch per foot for crowning or insloping and proposed a ¼-inch standard. OSM evaluated the various proposals and considered having different requirements for volume of traffic speed and weight of vehicle. The coal haul road requirements, Road Class I, which utilize the large hauling vehicles, retains the inslope and crown requirement. This principle is consistent with proven standards established by Federal agencies such as U.S. Forest Service, U.S. Department of Transportation and State agencies and professional road construction associations. The insloping is needed to keep surface drainage functioning and the road surface stable. OSM has changed for Class I Roads from ½-inch per foot to ¼-inch per foot in response to comments which led to OSM's recognition of problems with a ½-inch standard during icy, rainy or snowy conditions, when vehicles might slide off the road. (Pfleider, 1968, Chap. 13.1, page 830, and Kaufman, W. K., 1977, p. 33). OSM's evaluation of Road Class II suggested no rigid slope requirements to keep surface drainage functional on these surfaced and unsurfaced roads. However, there is need for sufficient slope so that water does not pond on the road surface and penetrate into the subgrades. (Kaufman, W. W., 1977, p. 33). It is not the intention of OSM to impose costly, time consuming grade controls or equipment requirements, by incorporation of the cross slope requirement, as some commenters suggested would be the case. The intent is to insure that water would not be allowed to pond on, or infiltrate the road surface, thereby increasing erosion and potential for reduced water quality. Use of a ruler and lock level, which is standard practice for rough grade work in the highway industry, provides satisfactory cross slope grades, at no great additional time or costs.

Several commenters objected to the complete exclusion of toxic-forming material in all road embankments. The commenters cited a site-specific case where the road is located over a large existing refuse site and all runoff water is treated. OSM agrees that requiring an operator to transport non-toxic material to construct a road on a toxic-producing refuse pile would be too burdensome. (U.S. Forest Service, 1977, Section 205. Accordingly, Section 816.152(d)(13) was revised to reflect this site-specific condition for Class I Roads on waste banks.

Several commenters suggested deleting specific design criteria requirements and including their provisions in an introductory paragraph of 816.162(d) and 816.172(d). Commenters provided the following recommended language revision:

"Embankment sections shall not be constructed until all vegetative materials and topsoil have been removed from the embankment foundations to ensure stability and no vegetative materials shall be placed beneath or in any road embankment. The embankment slopes shall not be steeper than 1v:2h(50 percent) and the embankment shall have a minimum safety factor of 1.5 or such higher safety factor as the regulatory authority may specify."

By combining the design criteria as shown, the commenters contend, subparagraphs (c)(1) through (c)(9) of the proposed rules can be deleted without jeopardizing the intent of the Section. Commenters further point out that the preamble to the proposed rules indicated that these design criteria were obtained from sources whose applicability were directed toward more permanent "rigid-type" of State and Federal highways whose settlement, etc., are of a more critical nature than for mine access and haulroads. As a final recommendation, the commenters contend that if their alternative language is not adopted, paragraphs (c)(1) through (c)(9) of the proposed rules should be reworded to make them more applicable to mine roads.

Section 515(b)(17) of the Act established a general performance standard to "insure that the construction, maintenance, and postmining conditions of access roads into and across the site of operations will control or prevent erosion and siltation, pollution of water, damage to fish or wildlife or their habitat, or public or private property." Congress included this provision, having recognized that mining roads occupy approximately 10 percent of the area disturbed and are a major source of adverse impacts of mining operations. (Grim and Hill, 1974, p. 116). Therefore, to insure that the intent of Congress is satisfied, the Office believes that it is essential to

promulgate specific road construction requirements designed to prevent or control erosion and siltation, pollution of water, etc. The effectiveness of such requirements are well documented in various studies (e.g., Parker, Paul E. 1965, Criteria for Designing and Locating Logging Roads to Control Sediment).

Further, the Office does not believe that the commenters suggested language revision would provide adequate minimum standards for mine roads. The commenters' language, for example, excludes specific requirements for "keying" embankments, spreading materials in successive layers, and compacting each layer of embankment before spreading the next layer. These requirements, the Office believes, are essential in maintaining road stability and possible damage to water and aquatic habitats caused by unnecessary erosion and siltation.

Under the new road classification scheme and restructuring of the regulations, the Office has adopted the commenters second alternative of rewording the specific design criteria to more accurately reflect road construction needs as they relate to mine access and haul roads. Since the commenter did not provide specific language, however, a basis for comparison is not available.

With regard to the commenters' concerns relating to the rules being predicated on "rigid type" State and Federal highway engineering standards, the Office would like to point out that the revised rules permit sufficient flexibility.

Some commenters wanted the road cut and embankment requirements only to apply to roads approved for permanent retention as part of the postmining land use. OSM did not accept this suggestion, because the erosional and sedimentation problems from non-permanent roads are precisely the kinds of problems the standards of Section 515(b) were intended to solve.

Sections 816.152(d)(1), 816.162(d)(1), and 816.172(d) establish requirements that vegetative materials be removed from the embankment foundation to ensure stability and no vegetative materials on topsoil shall be placed beneath or in any road embankment. The purpose of this requirement is to ensure that vegetative materials will not subsequently decompose, thus causing failure of the embankment. The reason for prohibiting the placement of topsoil in embankments is to ensure that topsoil is properly stockpiled and available for respreading during the reclamation phase.

Several commenters objected to the blanket requirement that topsoil could not be placed beneath or in any road embankment. Under certain circumstances, they indicate, this is unjustified and could be counter-productive, particularly in instances where the road to be constructed will remain as part of the post-mining land use. In such situations, the commenters state "disposal of topsoil would require disturbing additional land that would normally not be affected." They further cite that use of topsoil in embankments does not jeopardize the stability of the embankment.

The Office agrees with the commenters that placement of topsoil in the embankment will not always impair the structure's durability. The Office believes, however, that topsoil is a valuable resource, generally in limited supply. Even in those situations where mine roads are approved as part of the post-mining land use and will not be restored in accordance with 30 CFR 816.156 and 816.166, topsoil removed from these roads during the construction phase may be needed elsewhere in restoring the mined area to a productive state. For this reason, the Office believes that it is necessary to give special attention to the collection and stockpiling of topsoil.

As previously indicated, the purpose of requiring removal of vegetative materials from embankments is to eliminate possible embankment failure caused by the decomposition of buried vegetative materials. Such potential embankment failure exists for all slopes, but the severity of possible damage generally increases as the degree of slope increases or road usage increases to a steady, heavy-weight flow. Therefore, the Office believes it essential to remove all vegetative materials from embankments on permanent roads or on roads which will be used for more than six months.

Paragraphs 816.152(d) (14) and (15) and 816.162(d) (13) and (14) are designed to reduce embankment-caused erosion by assuring a vegetative cover is promptly established on the embankment, for long-term stability. Erosion-control measures are required during construction to reduce acute, short-term problems. While not all roads in use will require sedimentation ponds, see Section 816.42(a), it is imperative that during periods of active disturbance, such as construction, appropriate measures be taken to reduce erosion and sedimentation. The benefits of vegetation as erosion control are discussed in the preamble discussion of 816.111–816.117.

Sections 816.152(e), 816.162(e) and 816.172(e)—topsoil removal.

This paragraph is intended to preserve topsoil as required by Section 515(b)(5) of the Act and to assure compliance with Section 515(b)(19) of the Act.

One commenter suggested that the topsoil removal and stockpiling requirements should not apply to exploratory roads. The commenter indicates that the majority of exploration roads are built on or are extensions of previous existing roads. Consequently, the amount of topsoil removed is minimal. The commenter further states that exploration roads are short lived and that stockpiling of topsoil would create more enviromental problems.

In reviewing available mine operation data and public comments, the Office agrees that more flexible rules are needed for the construction of temporary, low-class roads. Under the new road classification system and restructuring of the regulations, the Office has recognized such flexibility by specifying that "Field-design methods shall be utilized for Class III roads." Such procedures do not require removal of vegetative materials from embankments or foundations for embankments and topsoil removal and stockpiling is required only where excavation would require redistribution of topsoil to achieve proper revegetation. The commenters recommended revision was, therefore, partially adopted.

Another commenter recommended including language which would exempt operators from the requirements to remove vegetative materials and topsoil from low-lying, wet areas, especially if embankments are to be constructed. The commenter alleges that, as written, this paragraph would limit or prevent access to some possible mine areas. No further rationale is provided. The commenter further indicates that the proposed language revision would not sacrifice stability because it would only apply to flat areas. This comment must be evaluated in the context of the earlier discussion relating to topsoil removal in the context of embankment construction (paragraph 816.152(d)(1)).

The proposed or final rules do not specifically address construction across low-lying wet areas. As required by Sections 816.151, 816.161 and 816.171, however, road location is confined, insofar as possible to stable ground. In situations where it becomes necessary to cross low-lying wet areas, the Office must assume that regulatory authorities will require practices using the best technology currently available. This may include removal of unstable materials and replacing with ballast, embankment, surfacing materials, and drainage structures. Further, the Office does not agree that the language as written will preclude access to some potential mine areas. The provisions of paragraph (d) are primarily directed toward the construction of embankments on stable slopes of 20 percent to 50 percent. Nevertheless, sufficient flexibility is provided through the alternative spec-

ification provision of 816.150(d) and 816.160(d), to accommodate unique or unusual situations. For these reasons, the Office did not adopt the commenters suggested language revision.

A final comment on these Sections suggested that if the road is not for post-mining use on ground no steeper than 1v:5h (20 percent), the removal of vegetative materials should be at the discretion of the person mining, since their only effect is increased maintenance costs.

The Office recognizes that temporary roads (used less than six months) will not need to meet stringent vegetative removal requirements because buried vegetative materials will not decompose to the extent it will jeopardize road stability. For these reasons, the Office partially adopted the commenters recommendation by not requiring vegetative removal in the construction of Class III roads. However for roads of longer duration, or for any coal haulroads, vegetation must be removed to assure stability, since failures could have significant adverse environment effects.

§ 816.153, 816.163 and 816.173 Drainage.

These Sections contain drainage requirements derived from proposed Section 816.34 (43 FEDERAL REGISTER 41882, September 18, 1978). An introductory paragraph (a) on general drainage requirements is followed, for Class I and Class II Roads, by separate paragraphs dealing with: (b) ditches or other roadbed erosion controls, (c) culverts and bridges, (d) protection of natural drainage and (e) stream crossings. For Class III Roads (Section 816.173), the organization is the same except there are no specific requirements for ditches or other surface erosion control measures because of the temporary nature of these roads. This results in a slightly different numbering of the paragraphs.

The Class III Road standards implement OSM policy to evaluate these temporary roads more on the basis of performance than design. Such an approach was suggested, in part, by comments on this Section.

One commenter on the proposed version of these Sections requested that OSM only allow alternative designs pursuant to strict OSM guidelines. Technical guidance papers were suggested as one mechanism for assuring control. No alternatives would be allowed except pursuant to federally approved alternative design criteria. This suggestion has been rejected as overly restrictive and denying the States some of the initiative role Congress intended for them. Accordingly, Sections 816.153, 816.163 and 816.173 allow for alternatives to be evaluated by regulatory authorities after demonstrations by professional engineers, with approval only granted to these alternatives which demonstrate equal performance. Sections 816.153(a), 816.163(a) and 816.173(a) contain general requirements for drainage flow control measures on roads. For Class III Roads the only requirement is for temporary culverts where necessary. Class I and Class II Roads must have drainage structures capable of safely passing the 10 year, 24 hour precipitation event.

§§ 816.153(a)(1), .163(a)(1) and .173(a)(1).

Several commenters objected that the operator should have to prepare hydraulic designs for each road to establish that the 10 year, 24 hour event can be safely passed. These commenters suggested that if the State regulatory authority had established road building design criteria based on such an event, the operator should be able to meet this Section's requirements by following those criteria. OSM agrees, and believes that these comments were based on too narrow a reading of the proposed rule. In their State program submissions under Subchapter C, States may present for approval those alternative design criteria which they are willing to allow operators to follow in order to be relieved from the requirement to submit hydraulic studies for the drainage system.

Various commenters suggested that the 10 year, 24 hour precipitation event is too stringent a standard for roadway cross drainage. They suggested reduction to the 10 year, 6-hour storm as being more in line with MSHA requirements for non-impounding structures. However, the Act puts emphasis on environmental protection, rather than the more narrow range of miner safety with which MSHA is concerned. Accordingly, the 10 year 24 hour event was retained as appropriate for roadway cross drainage in Class I and II Roads. (Kaufman W. W. 1977, p. 39, 40 U.S. Forest Service Section 72.1.). The small contributing surface area that a road will occupy, in combination with ditch-line erosion stability requirements for culvert spacing, will not require excessively sized cross-drainage culverts, when designing for the 10 year, 24 hour event (U.S. Forest Service, Section 71.43 (1)).

Class III roads provide for alternative roadway cross drainage systems which are appropriate given the short life and low traffic volume ratios (U.S. Forest Service 1977, Sections 100.42, 621, 26.21, 26.24 and 721). OSM believes that because the drainage control measures required are not extensive, some restriction of use on Class III Roads during adverse climatic conditions should be exercised. Therefore Section 816.175(b) was added. (U.S. Forest Service 1977, Section 100.42).

Several commenters requested that the requirement for drainage structures to meet the 10 year, 24 hour storm should only apply to roads which would be in place for more than five years. These commenters gave no reasons upon which the change could be based. As proposed, the standard applied to all roads with a life over one year. OSM believes that having a separate standard for roads which would be in place between six months and 1 year, would lead to confusion and difficulties in enforcement. Having decided to classify roads for all purposes in accordance with the Class I, Class II and Class III definitions, the 10 year, 24-hour event now applies to all roads which will be in place over six months.

OSM considered adopting a sliding scale of design criteria keyed to the anticipated life of the structure. This approach was not implemented, because the office felt that, although any one structure might be in place for so brief a period its chances of being subjected to the 10-year storm are small, there may be thousands of these structures in place at any time, and many of them will be subjected to the 10-year storm, based on probabilities. The 10-year event was selected as a reasonable balance between overdesign and insufficient standards, and is found in many State and Federal schemes. In addition, the single standard will facilitate regulatory authority review of permits, State, Federal and citizen inspections and enforcement.

Paragraphs 816.153(a)(2), 816.163(a)(2) and 816.173(a)(2) apply the sediment standards of 816.42 and 816.45 to roads. The reader is referred to the preamble discussion of these Sections for an understanding of their bases and purposes. One commenter suggested that a minimum sediment storage volume of .125 acre feet/acre disturbed should be specifically required along haul roads. For the reasons explained or referenced in the preamble discussion of 816.42 and 816.45, sediment ponds will not always be required for roads. Where they are required, the minimum sediment storage volume is specified in Section 816.46.

Paragraph 816.153(a)(3) requires limits on maximum vegetation clearance around coal haul roads. This provision had appeared in proposed section 816.35 and is intended to minimize erosion and destruction of animal habitat around coal haul roads.

Paragraph 816.153(b) and 816.163(b) contain provisions originally proposed as 816.34(b). The requirements are mandatory for all Class I, and shall be used where necessary on Class II roads. Ditches are required to carry

water that has drained off the road sections and to intercept water draining from cut slopes. Intercepting this roadway drainage, and disposing of it through appropriate cross drains will ensure the road structure will not cause sedimentation problems and help ensure proper function of the road. Water must be conveyed in a manner which will not saturate fills, or cause excessive ditch erosion. Undulation of road profile is required if necessary to facilitate flow in ditches. On Class II Roads ditches are only required in wet areas. Because of the lower traffic volume the Class II road will handle either ditches or road dips are required in other areas. The drainage handled by these dips or ditches must be controlled to minimize erosion or saturation. No analogous requirements are promulgated for Class III roads.

Sections 816.153(c), 816.163(c) and 816.173(b) derive from proposed Section 816.34(c). For Class I and Class II roads, subsection (c) is divided into two paragraphs: (c)(1) relates general to design and (c)(2) relates to spacing and location.

Under (c)(1), the requirements are identical for Class I and Class II roads, except that trash racks and debris basins are required in some instances for Class I Roads. Culverts and bridges on both Class I and Class II roads must be designed safely to pass large storm events, to remain in good functioning order given the weights they will bear and the volume of water they will pass, and culverts must be covered to a depth of one foot. For Class III roads a lower storm event must be safely passed.

Paragraph (c) (1) requires for Class I and Class II Roads, that minor culverts, as defined in U.S. Forest Service Handbook Chapter 7721.05e pg. 8, must pass the 10 year 24 hour event. Major culverts and small bridges with spans of 30 feet or less must pass the 20 year, 24 hour event. Bridges with spans of more than 30 feet shall pass the 100 year, 24 hour event. (U.S. Forest Service handbook Chapter 7721.81a 3, pg. 55). The differentiation is based upon the degree of risk if failure should occur in these structures. The selection of these recurrence intervals involves consideration of many factors, among them the expected flood damage upstream and downstream, loss of the use of the road, and damage to adjacent property. Paragraph 816.173(b) requires culverts and bridges to pass the one year, six hour event which is deemed appropriate given the lower risk of a larger event since the structure will be in place less than six months.

The standard for bridges derives from proposed Section 816.34(d), which had required the standard be met for all structures crossing streams which drain more than 100 acres. The standard now only applies to major bridges, those with spans over 30 feet, in accordance with U.S. Forest Service Handbook 1977 pg. 56.

One commenter objected to uniform design storm standards, and suggested a sliding scale of design storms of decreasing frequency as the expected life of the facility increased. The underlying theory of the proposal was that this would more closely tie the likelihood of the event to the applicable design. The standard was accepted insofar as a temporary Class III Road has a lower standard. However, for long term structures a standard independent of facility life (although dependent on facility size) was adopted for the reasons discussed above in the context of the similar comment received on 816.153(a). Another commenter requested a five-year, 24 hour design event for roads to be in place under five years, with the 10 year, 24 hour event for longer-term roads. This suggestion was not accepted because OSM believes that the administration of the program requires a limited number of road classes. Adding the five-year distinction here would bifurcate both Class I and Class II and create five road classes, where three seems adequate. Several commenters requested the 10 year, 6 hour storm should be the standard, rather than the 10 year, 24 hour storm, but no technical reason was presented for OSM to change the proposed standard. However, in response to these comments, a variance procedure from the 10 year, 24 hour standard has been provided in paragraph (c)(2)(v) of all three sections for roadway drainage, if no risk is presented. A similar variance is provided under other existing regulatory schemes. (Kaufman, W. W. and Ault, J. C., 1977, p. 43; W. Va. Dept. of Natural Resources, 1971, 206, Section 507).

Paragraph (c)(1)(ii) is intended to assure that culverts are designed for water to flow freely and will resist collapse and erosion at intake and outlet points. Paragraph 816.153(c)(1)(iii) requires debris collectors for Class I Road culverts if necessary to protect drainage structures from plugging, causing them to malfunction as a water conveyance. This requirement appeared in the proposed rules in Section 816.34(a).

Paragraphs 816.153(c)(1)(iv) and 816.163(c)(1)(iii) require covering of culverts to a depth of one foot by compacted soil. As many comments pointed out, the one foot standard is universal in State highway requirements. (See "Steel Drainage and Highway Construction Products," p. 128.) As proposed, the culvert would have had to be covered to a deeper depth if its diameter exceeded two feet. OSM has changed this requirement as suggested by these comments. Where deeper covering is appropriate, operators are likely to use good judgement to avoid failures.

Paragraph (c)(1)(v) assures that culverts will have adequate bearing strength so that collapse from vehicle weight is minimized. Selection of the proper gauge of pipe will ensure the proper function of the culvert and the road structure.

One commenter suggested a specific standard of culvert cover geared to weight of vehicles: two feet for vehicles under 100,000 pounds and three feet for vehicles over 100,000 pounds. This standard is suggested by U.S. Bureau of Mines Circular No. 8758, 1977. (Kaufman, W. W. and Ault, 1977). While OSM agrees this is a reasonable standard, it is not the only standard which may be adequate. Accordingly, the last paragraph of (c)(1) has been left more general. A State may adopt this standard in its program.

One commenter suggested that the last two paragraphs in (c)(1) were redundant and aimed at achieving the same purpose. While both requirements are aimed at culvert protection, the first is a specific minimum design criterion for covering and the second is a general performance standard to consider all relevant factors to be sure that pressures on the culvert will not jeopardize the structure. Having sufficient cover over the culvert, and then selecting a culvert that does not have the strength to resist the passive pressure and vehicle weight it will receive could cause environmental damage and loss of use of the road if the culvert fails. Accordingly, OSM believes both standards are necessary and has retained them.

For Class I and Class II Roads, paragraphs (c)(2)(i)–(iii) relate to culvert spacing. For Class II Roads, these same standards also relate to spacing of drainage dips. The maximum spacing is somewhat greater for Class I Roads than for Class II Roads because Class I Roads are crowned so there should be less concentration of runoff, and because Class I surfacing requirements will reduce the likelihood of erosion.

The spacing requirements are somewhat stricter for Class II Roads than for Class I Roads, because they also apply to dips. However, the spacing can be increased if the regulatory authority finds, under paragraph (c)(2)(iii), that erosion will not be increased. OSM suggests that the appropriate means of utilizing the provisions of (c)(2)(iii) will be for the operator to present a hydraulic study to the regulatory authority for evaluation, as contemplated by many commenters.

The standard spacing requirement of the proposed rule was written in a way which had no standards for grades of less than two percent, between five and six percent or 10 and 11 percent, or greater than 15 percent. In the final rule there is a standard for all grades.

The culvert spacing standard for Class I roads is that recommended by the U.S. Bureau of Mines (Kaufman and Ault, Design of Surface Mine Haulage Roads Manual, 1977).

Several commenters objected that fixed culvert spacing would defeat the goal of the regulations to minimize altering natural channel locations. This was not the intention of OSM, and paragraph (c)(2) has been clarified to indicate that it applies to spacing of road surface drainage culverts and dips, not other structures.

One commenter requested that a minimum culvert size be specified, but gave no technical backup for the request. When the specified design storm is used in selecting culvert size, OSM could not give any technical support to requiring a larger culvert if the design called for something less. Accordingly, this commenter's request has not been implemented.

Several commenters requested no standard minimum spacing be specified in the regulations. These commenters argued that a more general standard, such as spacing culverts to reduce velocity, scour and erosion would be more appropriate. OSM disagrees. Minimum standard spacing will lead to uniform minimum national standards and will assist in inspections and enforcement. However, site-specific design is encouraged, and if it results in showing more desirable spacing from an environmental point of view, the regulatory authority can approve it for the particular road. This may be especially true in the West, in regard to which many commenters felt the arid climate made the required frequency unnecessary. While OSM does not necessarily agree with that assertion, the matter is most appropriately evaluated by the regulatory authority. In wet areas the variance will allow water to be carried in ditches to natural low points where it will cross the road in a culvert, if that will result in less erosion.

Paragraph (c)(2)(iv) requires surface drainage culverts to cross the road at not less than a 30 degree angle downgrade (W. Va. Department of Natural Resources Mining Regulations, Chapter 20-6 pg. 10). Many commenters stated that the 30 degree restriction was inappropriate in some cases where the culvert might be in a steeper natural drainway. OSM has clarified this Section in accordance with the original intent to indicate that it applies to surface drainage relief culverts, not diversions of natural water resources under roads which are discussed under 816.153 (d) and (e), 816.163 (d) and (e) and 816.173 (c) and (d).

Several commenters said they could not discern any reason for the 30 degree limitation. OSM believes that this restriction will control sediment from buildup in the culverts. The capacity of water to carry sediment varies with its velocity. The 30 degree angle down grade represents the best of design and economics of pipe length. A larger angle, up to 60 degrees, would carry the water better from a ditch section with less sediment retention, but would also result in much longer pipe lengths. Therefore OSM has used the 30 degree angle as have many State programs already in effect. This will lead to less culvert failure due to sediment plugging and erode stable road structures.

Paragraphs (c)(2)(iv) is designed to protect the inlet end of the culvert from erosion of the headwall and to assure that culvert discharges do not saturate fills. These were proposed as paragraph 816.34(c)(3). While several commenters believed that the requirements to protect the inlet end should only apply if necessary to prevent erosion, OSM believes that the velocity and amount of water involved, and the important role of the culvert in erosion protection require mandatory measures to assure inlet-end soundness. Variances will only be available if the operator makes the showing referred to in 816.150(d) and 816.160(d).

Several commenters objected to the requirement, as they perceived it in the proposed rules, that culvert flow would have to pass through the fill in a pipe and then be discharged below the toe. These commenters believed that such a requirement would lead to excessive velocity of water which would invariably increase erosion, especially in steep slope areas. OSM intends that the flow be conveyed in the best manner to minimize erosion and to prevent saturation of fills. A riprap channel on the fill face may, in some circumstances, be appropriate, although it should not be favored where the fill slope is gentle enough that pipe flow presents little risk. The language of the last paragraph of (c)(2) has been revised to implement this view.

With regard to this same paragraph, several comments were received questioning the requirement that the outlet end of a pipe be placed below the toe of a fill. This provision has been reworded to clarify that the water shall be discharged below the toe of the fill, using a conduit or rock riprap. It is not intended that a pipe must always extend from the ditch line to below the toe of a fill. The revised wording recognizes that water may be conducted through the pipe at a normal gradient, and then down the fill using either riprap or other conduits to prevent damage to the fill or saturation (Kaufman W.W. 1977, pg. 45-47, U.S. Forest Service 1977, Section 206A, 24.45, 26.21, 26.25, 603.05 and 621).

Two commenters suggested that rock riprap should only be required when needed to minimize erosion. OSM believes that to minimize damage to the environment, measures such as riprap protection must be provided to prevent scouring by water discharges (U.S. Forest Service 1977, Section 619, 26.27; Kaufman W.W. 1977, p. 45). Accordingly, these comments have been rejected.

§§ 816.153(d), 816.163(d), and 816.173(c) Natural drainage.

These Sections derive from proposed Section 816.33(d) and are intended to preserve, to the extent possible, natural drainage flows.

Many commenters were concerned with the relocation or altering of natural drainageways. Natural drainageways are not to be relocated or altered by routing the water courses into and down a ditch to an outlet in another drainage course unless the alternative of relocation is approved by the regulatory authority. The objective is to leave the natural drainage patterns intact insofar as practical.

Relocation of the natural drainage is permissible when the drainage is not blocked, no significant degradation occurs to the hydrologic balance, and there is no adverse impact on adjoining landowners (U.S. Forest Service 1977, Sections 50.4; 100.42; 71.33). The term "significant" as used in paragraph (d)(2) is intended to require that the operator demonstrate and ensure that the altering or relocation of the natural drainageway does not result in degradation of water quality in the receiving waters to the extent that applicable water quality standards are not violated (U.S. Forest Service 1977, Sections 206.06, 71.31, 71.33 (4) and 71.33 (Figure 1)). However, without the word "significant," a literal reading of the paragraph might lead one to believe that natural drainageways can never be relocated, which is not the intent of the provision. The addition of the word significant is in no way intended to change the requirements under Section 515(b)(10) of the Act for minimization of disturbance to the hydrologic balance.

One commenter felt that it was unclear whether the natural drainage included streams and, if it did, whether this paragraph or the following one is to control.

OSM believes this paragraph and the one on stream crossings which follows are consistent. While this para-

graph applies to all diversions or alterations of perennial, intermittent or ephemeral stream, or other drainways which occasionally convey flow from precipitation, snow melt or overflow of other water-holding features, the paragraph on stream crossings adds additional restrictions for streams.

One commenter felt the proposed version of the natural drainage rules was too broad, in that it might be read to apply to natural drainage around sediment ponds or at other locations unrelated to roads. Accordingly, the language has been clarified to be limited in scope to drainageways which might be affected by road construction or reconstruction.

Many comments were received questioning a proposed 15-foot height limitation on embankments over stream crossings. The comments correctly pointed out that if the culverts or other drainage structures are adequately designed to pass the proper precipitation event, a 15-foot embankment limit adds no environmental protection. Both MSHA and some States have a 15-foot limitation. These comments have been accepted and the 15-foot limit has been deleted from the regulations.

§ 816.153(e), 816.163(e), and 816.173(e) Stream crossings.

These Sections are designed to protect streams crossed by roads. They derive from proposed Section 816.31(d). For Class I and Class II roads, all stream crossings must be over drainage structures. For Class III roads, structures are only needed at permanent streams. All structures must be constructed so as not to affect normal flow or the profile of the stream or adversely affect aquatic life.

Several commenters suggested a sliding scale of storm design criteria based on the expected life of the stream crossing. A sliding scale was not adopted for the reasons discussed above in the discussion relating to comments requesting such a scale for drainage structures.

One commenter requested this regulation specifically address potential damage to fish migration. For the reasons discussed or referenced in the preamble to Section 816.97 and the Section of OSM's EIS related to aquatic life, OSM believes the potential damage to fish habitats to be serious. The purpose of the requirement here is to assure that both the regulatory authority, in approving plans, and the operator, in designing and implementing them, fulfill the requirements of Section 515(b)(24) of the Act to use best technology currently available to protect fish and related environmental values.

§ 816.154, 816.164, 816.174 Surfacing.

The road surfacing sections derive from proposed Section 816.35. OSM has adopted some language changes for clarity.

Durable material is required on the surface of all Class I and Class II Roads. For all three Classes, the surface must be non-toxic and vegetation to be removed shall be kept to the minimum necessary. For Class I Roads this requirement appears in 816.153(a)(3) to emphasize its importance in drainage structure planning.

Language relating the durability of road surfacing material to volume of traffic and weight and speed of vehicles was added to be consistent with the scheme for three classes of roads. Failure to construct a good, durable road surface will result in increased vehicle and maintenance cost, and cause excessive erosion. Fugitive dust also becomes a problem with improper road surfacing during dry times (Kaufman, W. W. 1977, pg. 23-30).

For all three Classes these requirements are intended to minimize road surfaces erosion, sedimentation, surface failures and adverse effects on wildlife and their habitat.

One comment recommended that durability of road surfacing material should be an economic consideration left to the operator. OSM has not revised the regulation in response to this comment because the Office believes durability must be a function of volume of traffic, weight and speed of the vehicles using the roads, so that stability is assured.

Failure to establish a good haulage road surface will result in increased vehicle and road maintenance, and could severly hamper the ability of a vehicle to safely negotiate the route. Dust problems are frequent, and can be severe if not controlled. Unsurfaced roads will cause severe sedimentation problems if allowed to go unchecked. Kaufman W. W. 1977, pages 23-30, U.S. Forest Service, 1977, Sections 300, 400, 701, 702, 703, 21.11-1.

§ 816.155, 816.165, 816.175 Maintenance.

These Sections were established to complete the logical format of this group of regulations. In proposed Sections 816.31 through 816.34, maintenance requirements were intertwined within each of the several subsections. Based on the requirement of Section 513(b)(17) of the Act to assure that "maintenance • • • will control or prevent erosion and siltation, pollution of water, damage to fish or wildlife and their habitats or damage to public or private property," these regulations for maintenance, as reorganized and elaborated for clarity, are appropriate. (Weigle W. K. 1965, pg. 18, 19; Kaufman W. W. 1977, p. 50).

These Sections require that Class I and Class II Roads be maintained at design level throughout their life, and the maintenance program be implemented to preserve the integrity of the road and associated structures. Class I Roads also must be promptly reconstructed before they can be used after damage by flooding or other catastrophic events. This will prevent environmental harm from the ruined road system or from coal haulage over inadequate roadways. The general requirements for Class III Roads require attention to conditions which might lead to erosion or degradation of water quality.

Regardless of how well a road is planned and constructed, lack of a complete maintenance program will lead to failure of the road to function as it was planned, and can cause severe downstream sedimentation. Dust, potholes, rutting, water infiltration and other conditions, if left unchecked, may impede vehicular control as well as cause environmental problems. Road maintenance should be preventive in nature, rather than corrective. (Kauffman 1977 pg. 50).

Maintenance work is expected to include maintaining the original cross-section configuration and proper drainage of the roadway. OSM's assessment of the need to meet water quality standards is that road maintenance and condition should always be checked closely, or continuously. (U.S. Forest Service, 1977, Section 30).

§ 816.156, 816.166 and 816.176 Restoration of roads.

These Sections derive from proposed Section 816.38 and establish the requirements for restoring the areas in which roads are located following mining, reclamation, and monitoring operations. The requirements for all three road classes are identical, except that no provision for disposal of surfacing material is made for Class III Roads, since they do not require durable surfaces. For Class I and Class II Roads, removal is required unless the road is approved for retention as part of the postmining land use.

The nine specific requirements of these Sections are intended to achieve the purpose of the Act as follows:

(a) Closing the road to vehicular traffic will eliminate further wear on the road, protect the public from dangers associated with a road that is not being maintained and allow restoration to proceed with minimal risk to property or human safety;

(b) Restoring natural drainage and removing bridges and culverts will help restore the original hydrologic balance;

(c) Ripping, plowing, scarifying and topsoiling roadbeds will prepare the site for revegetation;

(d) Rounding and blending will restore the approximate original contour; and

(e) Installation of cross-drains, water bars, terraces and the like will minimize long-term erosion after reclamation.

Several commenters suggested that roads constructed as part of the mining operation or incident to exploration may be needed for access to remote and isolated areas. They contend that such roads are important in the prevention and control of forest fires and provide access for hunting and fishing. In view of this, the commenters felt that the roads should be left in place rather than restored to the approximate original contour, as would have been required by the proposed rules. Class I and Class II Roads constructed for mining and exploration operations and which will be of value subsequent to mining and reclamation operations may be retained under Section 816.156(a) and 816.166(a), if the post mining land use requires a road network for fire control and prevention, for private or public access or other purposes. Class III Roads are low-standard, temporary passageways, generally used for exploration activities. Though many of these roads could be used as fire roads or for hunting or recreation access, they would generally be limited to off-road-vehicle use. Poor horizontal and vertical alignment and lack of permanent drainage structures, surfacing, and maintenance will make these roads virtually impassable by conventional vehicles. Off-road-vehicle use, particularly during wet periods, would cause rutting, channeling of water, puddling, erosion, and increased sedimentation in nearby streams. For these reasons, the restoration of Class III Roads to approximate original contour requirements is necessary to prevent unnecessary environmental impacts and to meet the purposes of Sections 102 (d) and (e) of the Act.

The Office recognized that obliteration of the road might in some circumstances create extensive environmental harm due to excessive redisturbance of the road prism. Therefore, the concept of blending the road into the topography was incorporated in the fifth and sixth paragraphs, based on comments received and work practices on thousands of miles of roads by the U.S. Forest Service. (Weigle, W. K., 1965, pp. 20–21, U.S. Forest Service, 1977, Section 210).

Especially in mountainous terrain, access during emergency periods may be essential and the reopening of the "bedded down" road would, therefore, be beneficial to public welfare. Such practices are currently being used. U.S. Forest Service 1977, Section 210.02. The Office wishes to emphasize that this blending is not to be construed as a variance from the requirement to restore the area to approximate original contour. The reader is referred to the preamble discussion for Sections 816.101–816.106 for guidance as to the extent to which blended features may be consistent with approximate original contour.

Another commenter suggested revising the opening words of the proposed Section to read ". . . immediately after a road becomes no longer needed for operations, reclamation, or *for inspection*. . . ." The commenter suggested that this revision is needed because all access roads should remain open for inspection purposes until final bond release. Both the proposed rules and the final rules . (Sections 816.156, 816.166 and 816.176) use the term "monitoring". This language achieves the same purpose as that proposed by the commenter. For this reason, the Office did not adopt the recommended language.

Several commenters recommended deleting Sections requiring road closure, scarification, topsoiling and construction of drains, dikes and water bars, stating that such requirements are unnecessary because all roads must be returned to approximate original contour unless they are a part of the postmining land use.

Under the new road classification scheme the provision that "the area affected shall be returned to approximate original contour" has been deleted. Instead, the Office has elected to require, in paragraphs 816.156(a) (5) and (6); 816.166(a) (5) and (6); and 816.176 (e) and (f), that "fill slopes shall be rounded or reduced and shaped to conform the site to adjacent terrain and meet natural-drainage restoration standards" and that "cut slopes shall be reshaped to blend with the natural contour". These changes were made to provide the operator and the public with a broad outline of the sequence of events required in restoring a road to the approximate original contour. The commenters suggested deletions were, therefore, not adopted by the Office, since the restoration requirements provide guidance as to the degree of obliteration of the road which will be required and specify appropriate erosion control.

Several other commenters suggested that topsoil and revegetation be combined with contouring in a single paragraph which would read, "the area affected shall be returned to approximate original contour, have topsoil redistributed in accordance with Sections 816.24–816.25 and revegetated in accordance with Sections 816.111–816.117". The commenters indicated that road surfaces should not be scarified and covered with topsoil before the grading work to bring the area back to the approximate original contour.

The proposed change, asserts the commenter, would follow the logical sequence of regrading, topsoil redistribution (including scarification if needed) and revegetation.

In reviewing the provisions of proposed Section 816.38(a)(4) and (a)(5), the Office recognized that the sequence of restoration listed could lead to confusion and misunderstanding. The Office agreed with the commenter and has revised these requirements to reflect that redistribution of topsoil and revegetation are the final steps in the restoration process. The commenter is also referred to the preamble discussion above, relating to the suggested deletion of Sections 816.151 (a)(1), (a)(7) and (a)(9), and other Sections.

Numerous comments were received suggesting that the paragraph requiring cross drains, dikes and water bars (816.156(a)(7), 816.166(a)(7) and 816.176(g)) be changed to read, "If needed to minimize erosion, cross drains, dikes and water bars shall be constructed". The commenters contended that if such structures are not needed, to prevent erosion, they should not be constructed. They further contended that erosion can be adequately controlled by revegetation and mulching.

The Office concurs with the commenters that revegetation and mulching can control erosion. Such measures will be used extensively where they prove effective in reclamation efforts and in minimizng erosion. The Office would further point out that the requirements of Sections 816.156 and 816.166, are not inflexible. Where the operator includes in his reclamation plan alternative means of reducing erosion from mine roads undergoing reclamation processes, the regulatory authority has the flexibility to evaluate and approve such measures if they meet the purposes of the Act and the regulations promulgated thereunder. Since structures are not required in all cases, the Office did not accept the commenters' alternative language.

Several commenters suggested that the proposed paragraph, which would have explicitly required restoration to approximate original contour, could cause excessive environmental damage. The commenters indicated that requiring fill materials to be moved back to cut sections would require an additional disturbance equal to or exceeding the original construction phase. This, the commenters allege, would mean increased erosion potential and disturbance of established vegetation, particularly if the material replaced in original cuts could not be stabilized. The com-

menters did not provide any alternative.

As discussed above, to the extent that road cuts and embankments are consistent with approximate original contour, they may be retained and blended rather than obliterated. However, the Act provides no variance from the requirement to restore approximate original contour for road-related structures and none is provided in these rules.

Another commenter suggested rewriting the contour provision to require that, "the area shall be regraded to control erosion and support revegetation. Fill areas shall remain as is with adequate natural drainage being provided". The commenter's alternative language is based on assertions that the proposed rules are not supported by research data in the references listed for this Section. The commenter further points out that "one reference states that removal of fills is impractical and road beds must be revegetated and slopes rounded."

The Office recognizes that reclamation efforts and activities will, initially, cause adverse environmental impacts. Removal of culverts, bridges, regrading and redistribution of topsoil will likely result in short-term adverse impacts, particularly to aquatic life and aquatic habitats and air resources. Upon completion of reclamation activities and following revegetation, reclaimed areas will, however, gradually return to a near natural condition (i.e., water quality and quantity, sediment discharge rates and air quality condition will return to approximate "background" levels). Additionally, deletion of the language "the area affected shall be returned to approximate original contour . . .", and substituting a requirement in Sections 816.156(a) (5) and (6), 816.166(a) (5) and (6), and 816.176 (e) and (f) for rounding, reduction, shaping to conform to adjacent terrain and to meet natural drainage and to blend with the natural contour, provides sufficient flexibility to eliminate the need for backfilling all road cuts, except for topsoil redistribution requirements, while meeting the requirements of Section 515(b)(2) of the Act. In making these revisions, the Office has partially adopted the alternative language suggested by the commenter.

Sections 816.156(a)(9) and 816.166(a)(9) specify that road surface shall be covered with topsoil. Commenters suggested that this provision be modified by deleting the reference to topsoil and adding, "unless otherwise determined by Section 816.22(e)". The commenters did not provide any rationale for the recommendation. In reviewing the provisions of Section 816.22(e), however, the Office assumes the commenters' intent was to provide for the respreading of topsoil substitutes and supplements when restoring roadbeds. Paragraph (9) requires that road surfaces be covered with topsoil in accordance with 30 CFR 816.24(b) Topsoil, as used in this Section, refers to topsoil removed in accordance with Section 816.22. These requirements provide for respreading of topsoil substitutes and supplements. The Office believes the commenters' concerns are accommodated within the language of existing regulations. The commenters' recommended change of language is not necessary and was not adopted.

Numerous comments suggested adding a new Section to read: "The regulatory authority shall grant variances for the reclamation of pre-existing roads, constructed prior to May 3, 1978, in areas where fill material is not available for backfilling to original contour, or where topsoil in sufficient quantities to meet the standard is not available." Commenters cite the proposed rules preamble discussion which recognized that relief from the provisions of proposed Section 816.38 (816.156, 816.166, and 816.176 as renumbered), may be needed for existing roads, and invited public comments on this issue accordingly. Commenters further indicate that the variance recommended is necessary "to prevent creating more environmental harm than the benefits realized for the restoration because they were not planned for during the design stages of the road".

Following review and analysis of the comments, the Office agrees that reclamation of pre-existing roads may require special consideration by the regulatory authority. The Office has elected to revise proposed Section 816.38 by including requirements that "fill slopes shall be rounded or reduced and shaped to conform the site to adjacent terrain and to meet natural drainage restoration standards" and that "cut slopes shall be shaped to blend with the natural contour". These requirements, the Office believes, should be responsive to the reclamation needs for pre-existing roads. In addition, special provisions for existing, non-conforming structures have been added to these rules as Sections 701.11(e), 780.12 and 786.21. The reader is referred to the preamble discussion of those Sections.

Sections 816.156(b) and 816.166(b) explain the requirements for removal, handling, conveyance, and disposal of road surfacing materials following cessation of operations. Several commenters suggested deleting this Section in its entirety. The commenters indicated that disposal of all road surfacing materials in accordance with Section 817.89 assumes that the road surface "is composed in part of lubricants, oils, greases or other petroleum products, which is generally not the case." This requirement, alleges the commenters, "is overly restrictive and unnecessary as well as excessively costly."

The Office believes that commenters misunderstood Section 816.89, which established general procedures for disposal of noncoal wastes. Paragraph (a) of that Section specifically requires that "(all) noncoal waste including, *but not limited to*, (emphasis added), grease . . . shall be placed and stored in a controlled manner in a designated area . . .".

Additionally, the requirements of paragraph (b) of Sections 816.156 and 816.166 provide discretionary authority for the regulatory authority to select other means of road surfacing reclamation, removal, and disposal. For these reasons, the Office did not accept the commenters' recommendation to delete this provision.

Several other commenters also recommend deleting this Section on the grounds that since the rules prohibit surfacing of roads with toxic or acid-forming substances, there is no need to remove and dispose of surfacing materials as prescribed in Section 816.89. Commenters further indicate that since the proposed rules require scarification of the road and covering with topsoil, that road surfacing materials left in place should not cause any problems.

The Office believes that the requirements of Sections 816.156(b) and 816.166(b) provide sufficient latitude to permit the regulatory authority to select other satisfactory means of reclamation, removal and/or disposal of road surfacing materials. the regulatory authority may elect to permit operators to scarify and leave surfacing materials in place, provided such practices meet the requirements of the approved State program and the intent of the Act, including no risk to vegetation or water quality.

§ 816.180 Other transportation facilities.

Authority for this Section is found in Sections 102, 201, 501(b), 503, 504, 507(b), 515(b) and 701 of the Act.

Movement of coal, equipment and personnel within the mine plan area may require roads, railroad loops, spurs, sidings, surface conveyor systems, chutes and aerial tramways. The general standards set forth in this Section are intended to ensure the minimization of the adverse effects to hydrology, fish, and wildlife and their habitats, and public and private property as a result of the design, construction, reconstruction, and utilization of transportation facilities other than roads.

The literature, State laws, and regulations used in preparing this Section included those works cited in the pre-

amble discussion of Sections 816.150–816.176.

This Section was numbered 816.36 in the proposed regulations and has been renumbered Section 816.180 in the final regulations to follow immediately after the rules for roads, so that all regulations relating to transportation facilities are together.

In preparing this Section, some editorial changes were made for clarification only. In addition, the words "or reconstruction" have been added in the introductory paragraph to require these standards to be met in the context of major overhaul of the facility in the same manner as if a new facility were being constructed. The reader should review the preamble to Sections 701.11(e), 780.12 and 786.21 for further elaboration.

Section 816.180(a) addresses the potential environmental problems associated with the construction and use of transportation facilities incident to the mining operation when these facilities are located in or pass through wildlife habitats. Environmental problems including fugitive dust and damage to wildlife habitats such as destruction or dimunition of all or part of the habitat or pollution of or disturbance of feeding areas or water sources may result. This Section further restricts the limits of suspended solids which may be introduced into streams or other water bodies to those allowed by existing State and Federal laws. This Section will assist the operator in bringing other transportation facilities in compliance with Section 816.97 of the regulations.

Section 816.180(b) deals with the problems of pollution of water bodies and the impedence of flow of water sources resulting from coal mine transportation facilities. This Section specifically prohibits the introduction into water bodies, either from surface runoff or air transport, pollutants from transportation facilities and the impedence of flow of any water body as a result of construction or use of transportation facilities incident to coal mining operations. This Section will assist the operator and the regulatory authority to assure compliance with Sections 816.42, 816.44, and 816.45 of the regulations when constructing or using transportation facilities other than roads.

Section 816.180(c) requires the permittee to control or minimize erosion or siltation resulting directly from the construction or use of transportation facilities incident to the mining operation, other than roads. These facilities must be constructed in such a manner so as to control erosion of the roadbed or support foundation and to protect the land surfaces over which they pass from defoliation and erosion. Control of erosion and fugitive dust resulting from use of these facilities will assist in controlling or minimizing siltation in compliance with Section 515(b)(4) of the Act.

Section 816.180(d) of the regulations will assist the permittee in complying with Section 816.95 of the regulations and Sections 515(b)(4) and 508(a)(9) of the Act with respect to air pollution resulting from use of transportation facilities other than roads. The Section relates specifically to fugitive dust rising from the use of these facilities and from the transportation of the mined material. Section 816.180 identifies general guidelines and goals to be achieved with respect to the construction, use and maintenance of other transportation facilities. These goals become meaningful only when they are applied to specific mining operations identified by the operator and regulatory authority. Regional differences exist in the potential problems which may be encountered. It is expected that State programs will more specifically address these regional problems.

Several commenters argued that Paragraph (d) of Section 816.180 should be modified to explicitly require all facilities to comply with Section 816.95 regarding air resources protection. Sections 780.15 (Air pollution control plan) and 816.95 (Air pollution performance standards) do apply to these transportation facilities, and Sections 816.95 (a) and (b)(1)–(19) specifically address the fugitive dust problem these facilities can create. The Office believes that the additional reference here would just be redundant, or perhaps even misleading, since the Office does not at this time wish to foreclose the applicability of this Section to air quality problems in addition to those from fugitive dust.

One commenter recommended deletion of paragraph (d), relating to air quality. This recommendation has not been accepted because Sections 515(b)(4) and 508(a)(9) of the Act provide measures and requirements for complying with applicable air quality laws and regulations, applicable health and safety standards, and mandate the reduction of air pollution. The reader is referred to the preamble discussion of Sections 780.15 and 816.95 for a further discussion of this issue.

§ 816.181 Support facilities and utility installations.

This Section pertains to facilities that support the mining operation or other public facilities such as pipelines, electric or telephone lines which cross the mine plan area.

This Section has been renumbered as Section 816.181 from Section 816.39 of the proposed regulations to maintain its position after the transportation facilities rules in Part 816.

Authority for this Section is found in Sections 102, 201, 501(b), 503, 504, 507(b), 515(b) and (c), 522(e)(4) and 701 of the Act.

Section 816.181 sets forth in general terms a standard to ensure that all facilities supporting coal mining and reclamation operations or located in the mine plan area are environmentally acceptable and are adequately protected. The standards set forth in this Section are intended to minimize (1) the adverse effects to fish and wildlife, (2) the contribution of suspended solids to streamflow or runoff, and (3) the damage, destruction or disruption of utility, water, and sewage and transportation lines as a result of surface mining operations.

Section 816.181(a) sets forth examples of support facilities and utility installations which are covered by this Section. The examples cited are to be used as a guide and are not intended to be all inclusive. This Section also identifies specific environmental impacts resulting from these facilities which are to be minimized. The Office believes that these areas are significantly important to justify these performance standards. However, this does not mean such facilities are exempt from other performance standards of this Part. Rather, this Section is provided to add emphasis with respect to two problems requiring special attention under the Act.

Section 816.181(b) cites specific services for which measures must be taken to ensure continued service to the public. If both owners and the regulatory authority approve, however, different activities may be conducted.

All comments received on Subsection (a) expressed concern that the mine operator should not be held responsible for environmental damage from support facilities when the operator has no control over their design, construction or use. These comments state that public utility systems are constructed, reconstructed and maintained by the utility, are regulated under other statutes, and are not subject to the jurisdiction of the Act. These commenters suggested that the operators be held responsible only for those support facilities at or near the mine site which are under their direct control. These suggestions were not accepted because the Act does not limit its applicability to the identity of the owner of the offending facility. If the facilities are used in the mine operation, they must comply with the regulations. The operator can assure compliance in the context of contracting for those facilities even though the operator will not own them outright. On the other hand, facilities removed from the mine and not exclusively

serving mines may not be subject to this Section, because the operators could not reasonably be expected to influence their performance or design. If the commenters' suggestions were accepted, the regulations under the Act could too easily be avoided by separating ownership of the facilities.

Two commenters on proposed Section 816.181(b) suggested that the word "prevent" be changed to "minimize". Their reason is that in the normal course of mining activity, absolute prevention of damage cannot be assured. Some resources will be affected and attempts must be made to minimize this damage, destruction or disruption. This proposal was accepted and the language revised accordingly.

Several comments on Subsection (b) indicated that utility services other than those listed should also be protected. The Act refers to protection of public property which may not be limited to the examples cited. This suggestion has been accepted and Section 816.181(b) was revised to recognize water and sewage utility services in addition to those examples cited.

Some commenters suggested the addition of the phrase "such as, but not limited to" to reinforce the idea that the listing were only examples. The Office believes that those listed are the most common public utilities and States are encouraged, while in the development of their regulatory programs, to add to this list. However, these are considered the minimum types of facilities requiring national protection.

One commenter argued that this Section should explicitly provide that it does not attempt to adjudicate relative property rights if a health or safety hazard is not involved. The Office believes that the Act requires minimizing the adverse effects of mining, and the words "unless otherwise approved by the owner and regulatory authority" at end of Section 816.181(b) provides for determinations, at least in part, by the mineral owners. Therefore the suggested language has been rejected by the Office because State laws adequately provide for the relative rights of owners of utilities and mineral grants and the proposed language is unnecessary as repetitive of the self-executing provision in Section 510(b)(6)(C) of the Act. However, it should be emphasized that attempts to avoid the requirements of the Act or these rules based on past or future agreements between private parties will not prove successful, except to the extent Congress has mandated their acceptance.

Two comments were received recommending the elimination of environmental requirements for small mine operators utilizing mobile offices and support facilities. This recommendation has not been accepted because Section 515(b) of the Act provides for performance standards applicable to all surface coal mining and for the protection of public property and maintenance of land values. The Act does not authorize any blanket exemption for small operators in the permanent program.

PART 817—PERMANENT PROGRAM PERFORMANCE STANDARDS—UNDERGROUND MINING ACTIVITIES

Part 817 contains the minimum performance standards and design criteria which would be applicable under a State or Federal program for underground mining activities. The organization of this Part parallels that of Part 816, the standards for surface mining, although some modifications were needed to reflect the distinct differences between surface and underground coal mining, including entirely new Sections for subsidence (Sections 817.121–817.126).

§ 817.1. Scope.

Two commenters felt that Section 817.1 should be revised to encompass only surface operations and surface impacts incident to an underground coal mine. Section 507(b)(11) of the Act specifically authorizes concern for groundwater systems, and the Act is explicitly concerned about subsidence which results from underground mining techniques. Accordingly, the language of the regulations as proposed has been retained for complete scope of coverage.

§ 817.2. Objectives.

The objectives are derived from Sections 102 and 516 of the Act.

§ 817.11. Signs and markers.

This Section is substantially identical to Section 816.11, the corresponding Section of Part 816. The reader is referred to the portions of this preamble which discuss Section 816.11 for information concerning the technical basis and statutory authority for this Section. In addition to the Sections of the Act cited in those portions of the preamble, this Section is based on Section 516 of the Act. All comments and issues addressed in regard to Section 816.11, were also considered and similarly disposed of in preparing Section 817.11. Comments received on specific Paragraphs of Section 817.11 are addressed below:

Paragraph (d). Several commenters felt that the requirement for perimeter markers should be deleted in its entirety. The requirement for the use of perimeter markers is found in Section 701(17) of the Act. Several other commenters felt that Paragraph (d) should be amended. Surface perimeter markers above underground workings will not aid underground operations to stay within their permit areas, except for the surface operations and facilities associated with the mine. In addition, before mining the exact geographic location on the surface of the openings in an underground mine may be unknown or subsequently may be changed for purposes of avoiding bad ground, providing watertight closure, or for other unexpected conditions. Accordingly, paragraph (d) was amended to require persons who conduct underground mining activities to mark only the perimeter of all areas affected by surface operations or facilities. If the perimeters of such areas change, the perimeter markers must be adjusted accordingly.

Paragraph (e). Three commenters felt that buffer zone markers should be deleted in their entirety. While buffer zone markers may be applicable to surface activities, there appears to be no practical justification for markers in underground workings. Section 817.57(b) states that the areas not to be disturbed shall be designated a buffer zone and marked as specified in Section 817.11. Paragraph (e) was amended, and now requires buffer zones referred to in Section 817.57 to be clearly marked on the surface only to prevent disturbance by surface activities incident to underground mining. Underground marking is not required.

Paragraph (f). Many commenters felt that Paragraph (f) should be revised so as not to require marking surface areas with blasting signs over underground blasting, on the grounds that this may not be possible due to ownership of surface, and the surface effects of underground blasting would be minimal. The purpose of a blasting sign is to protect people who may inadvertently wander into the blast area. Inside an underground mine this is unlikely, due to other measures required to protect the opening to the mine. In addition, surface signs will do little to warn persons underground. Blasting that occurs on the surface at an underground mine will require appropriate warning devices and signs. Paragraph (f) was revised to reflect that it is limited to surface blasting.

§ 817.13–817.15 Casing and sealing of drilled holes.

These Sections are intended to ensure that boreholes, shafts, wells, and other accesses to underground mines are sealed, filled, cased, lined, or protected so as to ensure and protect the health, safety, and general welfare of the public, the quality of the environment, and potential land uses.

Authorities for these Sections are found in Sections 102, 201, 501, 503,

504, 507, 508, 516, 517, 701 and 717 of the Act.

Following is a list of the technical literature used in the preparation of these performance standards:

1. Ciolkosz, E. J., and others 1973. Soil as a medium for the renovation of acid mine drainage. Office of Water Resources Research December 1973.

2. Doyle, William S. 1967. Mine sealing, deep coal mining—waste disposal technology. Noyes Data Corporation, Park Ridge, N.J.

3. Garrett, W. S., and Pitt, L. T. C. 1961. *Design & construction of underground bulkheads and water barriers,* in 7th Commonwealth Mining & Metalurgical Congress, Johannesburg, South Africa. Vol. 3, 1283-1301.

4. U.S. Dept. of the Interior, Federal Water Quality Administration, 1970. *New mine sealing techniques for water pollution abatement.* Haliburton Co., 163 pp.

5. Penrose, Jr., et al., EPA 68 010135. 1973. Laboratory study of self-sealing limestone plugs for mine openings. EPA-43019-73-011.

6. HRB-Singer, Incorporated. April 1971. Detection of abandoned underground coal mines by geophysical methods. Environmental Protection Agency and the Pennsylvania Department of Environmental Resources, Project 14010EHN.

7. Moebs, N. N. & Krickovic, S. 1970. Air sealing coal mines to reduce water pollution. BOMRI 7354.

8. Penrose, R. G., Jr., and Holubec, Igor, 1973. Laboratory study of self-sealing limestone plugs for mine operations. EPA-670/2-73-081.

9. Stoddard, C. K. 1973. Abatement of mine drainage pollution by underground precipitation. EPA-67012-73-003.

10. U.S. Environmental Protection Agency. 1973. Processes, activities, EPA-43019-73-011.

11. U.S.E.P.A. 1975. Criteria for developing pollution abatement programs for inactive and abandoned mine sites. EPA-440-9-75-008.

Sections 817.13 and 817.15 require that exploration holes or other underground openings be cased, sealed, or otherwise managed "as approved by the regulatory authority." The decision to amend the proposed regulations by insertion of the phrase "as approved by the regulatory authority," thus giving the regulatory authority wide latitude in the management and disposition of exploratory holes, shafts, wells, drifts, and other underground openings, was made on the basis of comments discussed below and for the following additional reasons:

These Sections provide for the sealing or managing of openings to prevent people and animals from entering the opening thereby reducing the safety hazards associated with unsecured underground openings. The casing and sealing requirements of these Sections will aid in protecting water resources and the prevailing hydrologic balance by preventing or controlling the discharge of acid mine water. The formation of acid water is a naturally occurring phenomenon which results from the oxidation of iron pyrites in the presence of water and air. Coal mining operations disturb the soil, rock material, and coal bed, thereby exposing the iron pyrites which can greatly enhance the formation of acid drainage. The acid water draining from the coal mine enters streams and greatly reduces the useability of these waters for human or industrial consumption. Sealing of openings is one method of controlling the production of acid water from mines. Abandoned drift mines generally can be sealed, enabling the flooding of a mine and thus stopping the oxidation of pyrite. (Doyle, 1976, p. 9 and Moebs, 1970, pp. 1-3, 16-20.) Sealing will also reduce the formation of acid water by preventing the entrance and flow of water and air into and out of the mine.

Many different types of sealing techniques were considered in the development of these Sections. No specific technique is universally acceptable in the literature for sealing all underground openings. (Doyle, 1976, pp. 19-32 and Halliburton, Co., 1970, pp. 5-6, 9-10, 20-21.) Mine sealings may involve construction of a physical barrier across a mine opening to prevent passage of air, water, or persons and wildlife. The ultimate water level behind the seal is, however, seldom controlled, and excessive pressure can build up, resulting in a mine seal blow-out. Sudden release of large quantities of water can have devastating downstream effects. (Doyle, 1976, p. 19. See *Commonwealth* v. *Barnes and Tucker Co.*, 452 PA., 77, (1974).) Mine seals may be designed to retain large quantities of water, but seal leakage and failures generally occur from natural zones of weakness such as outcrop fractures. The natural rock and mineral surrounding the seal area is usually fractured, fissured, uneven, or unstable. As adopted, the regulations require that the seal must prevent the flow of water from the openings, except as otherwise authorized by the regulatory authority. Regulatory authorities should have the latitude to require the design of sealing and monitoring programs on a mine-by-mine basis so that catastrophic plug failures are prevented. Of course, if drainage from underground working is unavoidable, despite the use of the best available methods of sealing, then the resulting discharge to surface or groundwater must be controlled so as to achieve the applicable effluent limitations.

As evidenced above, the wide variety of situations likely to be encountered with regard to the managing of various underground openings make it appropriate that the regulatory authority be given discretion in what it may or may not require in properly managing these openings. Accordingly, the proposed regulations were modified by inserting the phrase "as approved by the regulatory authority" where appropriate.

Numerous comments received on these Sections also indirectly influenced the decision to provide the regulatory authority with greater latitude in dealing with the management of holes, wells, and underground openings.

1. Several commenters objected to the proposed regulations requiring the permanent sealing or closing of drilled holes or wells, stating that in many cases such holes or wells could prove useful to surface owners as a water wells, or to an operator as water monitoring wells. One of the commenters stated that often permission to test drill on private land was contingent on leaving a water well for future use by the land owner. Some commenters suggested that the regulations by revised to allow more flexibility in the use of drilled holes and wells. These suggestions were accepted, with the request for more flexibility evolving into greater latitude for the regulatory authority, as well as the language dealing with the requirements for transfer of water wells being added to the appropriate Sections, to provide a complete picture of the requirements applicable to these openings.

2. One commenter objected to the proposed provisions of Section 817.13 requiring an underground operator to permanently close each borehole or well in the permit area, stating that this could be an extremely expensive operation for the operator with little or no actual benefit to the environment or public safety. The rationale presented by the commenter was sound. Accordingly, the comment was accepted and the regulations were changed to require the closing of only those holes uncovered or exposed by mining activities. Holes already on the site and unaffected by the operation need not necessarily be sealed, except those which may require sealing to minimize disturbance to the hydrologic balance of the area being mined.

3. Sections 816.14 and 817.14(b) deal with the temporary casing and sealing of drilled holes. One commenter suggested modification of this provision to include additional exceptions for (drill) holes which will be removed in whole or in part by subsequent mining. This comment was rejected on the basis that this Section deals specifically with two types of holes: (a)

holes used to return coal processing waste or water to underground workings, and (b) holes used to monitor ground water. Both must have been specifically identified in the approved permit. As both types of holes have a specific function, there is no justification for waiving the requirements that they be sealed temporarily before use and protected during use. The importance of these holes is such that it would be to the operator's advantage to take all possible care in their location, and to ensure that they are securely cased and protected from damage. Leaving a proposed disposal well or monitoring well uncased and unprotected invites loss of the well before the end of its usefulness, and the subsequent cost of redrilling the well as required under the approved permit. Similarly, leaving a disposal well uncased would probably allow leachate from the coal processing waste or water access to porous rock or aquifers above the disposal area, and cause possible significant harm to the hydrologic balance of the area resulting from this access. Leaving a monitoring well uncased could allow toxic surface runoff or toxic groundwater generated by the mine operation access to the groundwater being monitored, again resulting in possible significant harm.

Finally, locating these holes in an area where they would soon be removed by mining would in most cases be an unsound procedure in view of the importance of these holes, and the importance of their proper casing and maintenance as explained above.

4. Section 817.14(a) provides that all mine entries which are temporarily inactive but have a projected useful service be barricaded, fenced, and posted to identify the hazardous nature of the opening. Specific standards for barricades and construction materials to protect the mine entries were considered in the formulation of the regulation. However, the Office elected to provide generalized standards for mine entry protection.

The regulations also require that protective devices be periodically inspected and maintained in good operating condition. Various inspection periods were considered in the formulation of the regulations, but no set time period (e.g., monthly, weekly basis) was included because the inspection period depends on the hazard of opening, type of protective device, and condition of the opening. The number of inspections must be frequent enough to ensure that the protective devices are in good operating condition and safe.

5. One commenter suggested deletion of this Section, as well as Sections 817.13 and 817.15, on the basis that these regulations would be a duplication of existing MSHA regulations. This comment was rejected. Section 702(a)(2) of the Act states that nothing in the Act shall be construed as superceding, amending, modifying, or repealing the Federal Coal Mine Health and Safety Act of 1969 (83 Stat. 742). Sections 816.13 through 816.15 were proposed to protect the health, safety, and general welfare of the public, the quality of the environment, and potential land uses. MSHA requirements are aimed primarily at protecting mine worker safety. OSM believes that these regulations are complementary and do not supersede or modify the MSHA regulations.

§ 817.21–817.25 Topsoil

These Sections are intended to assure that persons conducting underground mining activities remove topsoil or other plant growth material prior to operations, store it for later use as a plant root medium and redistribute it in a manner that will protect, as much as possible, its productivity.

Authority for these Sections is found in Sections 102, 201, 501, 503, 504, 507, 508, 515, and 516(b)(10) of the Act. In response to public comments, these regulations differ from those for surface mining where comments were substantive enough to warrant different performance standards.

Section 817.21 sets forth the general requirements for handling topsoil. It requires that topsoil and subsoil be separately removed, saved, and segregated from other materials. When removed, the topsoil shall be immediately redistributed or stockpiled for redistribution at a later time except when the permittee can demonstrate to the regulatory authority that an alternative procedure will provide equal or more protection to the topsoil.

1. A number of commenters contended that the requirements for removal, storage and subsequent redistribution of topsoil were not supportable because of the extended periods of time (20 to 40 years) that will be required for storage. It was argued that the value of stockpiling topsoil for long periods of time is unknown and unlike surface mining, the disturbed area of an underground mine remains disturbed for a number of years, thus the stockpiled material will lose fertility, or organic matter and other desirable characteristics that were present when the material was stored. Since fertility losses, for example, nitrogen lost due to leaching, can be restored with additions of fertilizer (Vogel and Berg, 1973, pp. 189), organic matter can be restored with additives and micro-organisms lost during the stockpiling period will regenerate quickly when surface soil layers are returned to the surface (McCormack, 1974, pp. 151). The regulations were changed only to accommodate those occasions when the permittee demonstrates to the satisfaction of the regulatory authority that an alternative procedure will provide equal or more protection for the topsoil and the use of that alternate procedure is approved by regulatory authority.

2. Other changes in this section of the regulations are discussed in the Preamble for Section 816.21 because public comments were essentially identical; hence, to avoid redundance the reader is referred to the discussion contained in that section. The Office believes that Sections 817.22, 817.23, 817,24, and 817.25 should be substantially identical to the corresponding Sections of Part 816 since there are no identifiable distinctions between the functions of these Sections. The reader is referred to the appropriate Sections of the Preamble of Part 816 for information and discussion on the regulations of the Sections of the regulation of Part 817.

§ 817.41–817.57 Hydrologic Balance.

INTRODUCTION

With the exception of Section 817.50, all of these proposed Sections are substantially similar to their corresponding Sections in Part 816. The reader is referred to the appropriate portions of the Preamble for Part 816 for information concerning the technical basis, alternatives considered, and statutory authority. In addition to the Sections of the Act cited in those portions of the Preamble, these Sections of Part 817 are based on Section 516 of the Act. The Office considers effects on the hydrologic balance sufficiently similar in surface and underground mining to warrant substantially similar performance standards, except for the differences noted in the following discussion.

§ 817.41 Hydrologic Balance: General Requirements.

1. Legal authority for this section is Section 516 of the Act and those provisions cited in the preamble to Section 816.41. That portion of the Preamble presents a detailed explanation of the basis and purpose of most of the similar provisions of 817.41. However, some differences between surface and underground mining activities were noted, leading to some different provisions for Section 817.41.

2. A commenter believed that the regulations failed to adequately address basic differences between surface and underground coal mining operations. No specific changes in the performance standards were recommended by the commenter and without which the Office had no basis to evaluate the commenter's opinion.

The Office considers the effects of many mining activities on the hydrologic balance to be sufficiently similar in surface and underground mining to warrant many substantially identical requirements under Sections 816.41 and 817.41, although the magnitude of effects may be quite diverse because of the differences between the operations. Because of those differences specification of differing requirements has been made in Sections 816.41(d)(2)(viii) and 817.41(d)(2)(viii)-(xi) to account for differences of underground activities. The magnitude of hydrologic impacts of underground mining activities is described at the final EIS, pages B-III-37-38, at USEPA, 1976 (a) pp. 51-57; pp. 88-94; and at Hill and Bates 1978, pp. 5-11 and 15-16.

3. A commenter thought that the word "prevent" in Section 817.41(a) should be replaced by "minimize." The Office rejected this change, because the intent of Congress was to prevent long-term adverse changes in the hydrologic balance with respect to all operations in an affected area (see Section 516(b)(9)(B) of the Act).

4. Another commenter thought that Section 817.41(d)(2)(x) was inconsistent with Section 516(b)(1) of the Act. The Office rejected this comment, because the regulation does not absolutely require subsidence prevention as the commenter asserted, but merely subsidence control, as implemented through 30 CFR 817.50, 187.121-817.128.

5. A few commenters believed that Section 187.41(d)(2)(xi) was inconsistent with Section 516(b)(9) of the Act, by requiring prevention, rather than "minimizing", of acid mine drainage. However Section 516(b)(9) of the Act clearly requires the operator to minimize the disturbances to the hydrologic balance by: "*avoiding* acid or toxic mine drainage . . ." Consequently, the Office rejected the comment because the Act requires prevention of acid mine drainage. Further, Section 516(b)(12) of the Act prohibits gravity discharge of water from new drift mines working acid-producing or iron-producing coal seams.

6. Additional comments and issues relating to this Section that are identical to those raised as to Section 816.41 are discussed under the preamble to that Section.

7. Additional minor editorial changes to improve clarity from the proposed rules were made by the Office and were nonsubstantive in nature.

§ 817.42 Hydrologic balance: Water quality standards and effluent limitations.

A. Introduction

1. Legal authority for this Section is Section 516 of the Act and those provisions cited in the preamble to Section 816.42. That portion of the preamble presents a more detailed explanation of the general basis and purpose of most of the specific provisions established in this Section.

2. This Section specifies water pollution control collection and treatment requirements, and contains minimum water quality standards and effluent limitations for underground coal mining activities. A general discussion of the purposes and objectives of this Section was at 43 FR 41744-41746 (September 18, 1978). To provide clarity to the reader, the Section was restructured from the proposed version to include discrete alphanumeric paragraphs.

3. Surface effects of underground mining and underground mine workings may result in adverse effects on surface water systems (USEPA, 1976 (a) at 88). These effects may result from acid mine drainage flow into streams (H.R. Rep. No. 95-218, 95th Cong., 1st Sess. at 58, 1977; Kosowski, 1973, 83 pp.; Caruccio, 1968 at 107-151; Musser, 1965 at sheet 4) from subsidence of the land surface or underground workings which allows surface drainage to be diverted into mine workings (Dunrud, 1976 at 2 and 34), and from erosion and water quality degradation as a result of waste material removed from the workings and placed on the surface facilities.

Water pollution control for underground coal mining operations is largely restricted to at-source methods for reducing water inflow into the mine workings and to treatment of collected mine drainage and surface runoff. Generally water quality analyses have not indicated significant differences between untreated waste water from surface and underground operations in similar geologic settings. (USEPA, 1976 (a) at page 53). Therefore, as required in EPA's Effluent Limitation Guidelines for the Coal Mining Point Source Category (40 CFR 434), the same numerical discharge limitations apply to surface and underground coal mining operations. These effluent limitations, with appropriate modifications to meet the intent of the Act, have been incorporated into Section 817.42(a)(2).

4. The preamble to Section 816.42 describes the general provisions relating to water quality standards and effluent limitations, which essentially parallel those of Section 817.42. Some differences exist between the nature of discharges (i.e., principally source and duration) between surface and underground coal mining operations.

First, as an alternative to passing all surface drainage and waters from underground workings through a sedimentation pond or series of sedimentation ponds, Section 817.42(a) allows for use of a "treatment facility" (e.g., a package neutralization device). Due to the fact that some operations may have very limited surface facilities and waters from the mine workings may have very low total suspended solids concentrations, the use of a sedimentation pond may not be necessary and a small-scale treatment facility may be best suited for treating discharges from coal mining operations to meet applicable effluent limitations.

With respect to the criteria for the removal of sedimentation ponds and treatment facilities, Section 817.42 includes criteria similar to Section 816.42 for surface drainage; however, for discharges from underground workings, Section 817.42 also requires that sedimentation ponds and treatment facilities remain in place until either the discharge continuously meets the effluent limitations without treatment or until the discharge has permanently ceased. This additional requirement is necessary, given the potential for long-term discharges of waters from underground workings, principally by gravity drainage. See H.R. Rep. No. 95-218, 95th Cong., 1st Sess. at 127 (1977).

Differences between the two Sections also exist with regard to the exemption to the requirement for use of sedimentation ponds or treatment facilities to treat surface drainage. Section 817.42 not only requires the discharge to show that such ponds or facilities are not necessary to meet effluent limitations or applicable State and Federal water quality requirements and that the disturbed, surface drainage area within the total disturbed area is "small," but also that there is no mixture of surface drainage with discharges from the underground mine workings. For exemptions to the treatment of discharges solely from underground mine workings, Section 817.42 requires that a demonstration be made that treatment is not necessary to meet the effluent limitations or applicable State and Federal water quality requirements and that there is no mixture of drainage from underground workings with drainage from surface areas. These additional criteria for the exemption to the requirement for sedimentation ponds or treatment facilities provides that mixing of waters with potentially very different qualities, volumes, and treatment needs will not occur.

Another important difference between Sections 816.42 and 817.42 is the definition of "disturbed areas." Specifically, Section 817.41 further limits the definition of this term to exclude not only areas affected by surface operations in which only diversion ditches, sedimentation ponds, or roads are located and the upstream areas are

not otherwise disturbed, but also to exclude surface areas affected by underground operations, unless those areas also are affected by fills, support facilities, or other major activities incident to underground mining activities. This limitation eliminates surface areas overlying underground mine workings from treatment as "disturbed," in terms of the requirement of collecting all surface drainage from such areas and passing that drainage through a sedimentation pond, a series of sedimentation ponds, or a treatment facility. However, it should be noted that the exemption from the collection and treatment requirements for surface drainage from areas overlying underground mining does not apply to water which, due to subsidence or other causes, percolates from the surface down and into underground mine workings. Such drainage is required to be handled or discharged from underground workings under the second sentence of the main text of Section 817.42(a) and is subject only to the exemption of Sections 816.42(a)(1) and (2)(ii).

B. Analysis of Comments

1. Most comments received with respect to Section 817.42 were virtually identical to comments received for Section 816.42. The disposition of those comments is discussed in the preamble to Section 816.42. The few comments directed only to Section 817.42 are discussed below.

2. Section 817.42(a) has been slightly modified to provide additional clarity with respect to the criteria for sedimentation pond and treatment facility removal. More specifically, the language with regard to this subject now states that sedimentation ponds and treatment facilities *for surface drainage from the disturbed area* shall be maintained until the disturbed area has been restored and the vegetation requirements of Sections 817.111-817.117 are met. In addition, the criterion for pond and facility removal in the proposed rules, of meeting ambient surface water quality requirements, has been modified to require compliance with applicable State and Federal water quality standards requirements for the receiving stream. This specific change is discussed in more detail at the preamble to Section 816.42.

3. As to the criteria for removal of sedimentation ponds and treatment facilities for discharges from underground workings to surface waters, the language of the criterion for compliance with the effluent limitations has been slightly revised to require that the discharges *continuously* meet the effluent limitations. This modification provides additional clarity with regard to what is required and will also provide for greater assurance that the hydrologic balance will be protected over the long-term, as required by the Act.

4. The proposed provisions of Section 817.42 relating to exemptions to the requirements for sedimentation ponds or treatment facilities have been revised to a small extent to provide for clarity. In addition, the exemption has been modified to include as a criterion, the requirement that no mixture of surface drainage and drainage from the underground mine workings takes place. This modification in the exemption criteria appeared necessary, based on the high probability for treatment of problems resulting from the mixing of waters with potentially very different quality, volumes, and thus, treatment needs. In addition, it assures that monitoring of mixed discharges, a very difficult task, is avoided.

5. A commenter stated that the requirements to collect all drainage from the disturbed area and pass this drainage through a sedimentation pond or treatment facility and to apply EPA's Effluent Limitation Guidelines for the Coal Mining Point Source Category to the discharge from this pond or facility, actually constituted applying EPA's effluent limitations for active mining areas to drainage from a "surface construction area." The commenter also stated that this requirement essentially amended the regulations promulgated under the Clear Water Act and, therefore, violated Section 702(a) of the Act.

The effluent limitations of Section 817.42(a)(2) are essentially identical to those of EPA for the Coal Mining Point Source Category (USEPA, 1977a). EPA's Effluent Limitations apply specifically to Coal Preparation Plants and Associated Areas, Acid or Ferruginous Mine Drainage, and Alkaline Mine Drainage. As defined in 40 CFR 434.11, General Definitions, "coal preparation plant" means "a facility where coal is crushed, screened, sized, cleaned, dried, or otherwise prepared and loaded for transit to a consuming facility." The term "coal preparation plant associated areas" is defined as the "coal preparation plant yards, immediate access roads, slurry ponds, drainage ponds, coal refuse piles, and storage piles and facilities."

Based on these definitions, it is clear that the EPA effluent limitations are intended to include treatment of point source runoff from disturbed areas for underground mines as defined in Section 817.42(a). Since the Office is legally bound to implement regulations for water discharges which are at least as stringent as those of EPA, the application of effluent limitations of Section 817.42(a)(2) to drainage from disturbed areas, as defined in that Section, does not constitute a violation of Section 702.

§ 817.43–817.44 Diversions.

The authority, basis and purpose for these Sections are the same as for Sections 816.43–816.44, and, in addition, Section 516, of the Act. Comments received on these Sections were similar to those for Sections 816.43–816.44. The preamble discussion to Sections 816.43–816.44, therefore, also serves as the Office's explanation of disposition of comments to Sections 817.43–817.44.

§ 817.45 Hydrologic balance: Sediment control measures; and 817.46 Hydrologic balance: Sediment ponds.

These Sections are substantially identical to corresponding Sections in Part 816. The reader is referred to the appropriate portions of the preamble for Part 816 for information concerning the technical basis, alternatives considered, and statutory authority. In addition to the Sections of the Act cited in those portions of the preamble, these Sections of Part 817 are based on Section 516 of the Act. While the Office considers the effects on the hydrologic balance to be sufficiently similar in surface and underground mining to warrant substantially identical performance standards, public comment was invited on how the differences in the effects of these types of mining should appropriately be reflected in the regulations.

§ 817.46(a)(1)

Commenters said the requirements to construct a sedimentation pond before any disturbance to the area is unnecessary for underground mining operations. The commenters state that underground mining operations do not create situations where water would be polluted.

Sedimentation ponds are required prior to any mining disturbance of the disturbed area. Generally, underground mining activities include an exploratory drilling program, excavating and developing a bench or a working area or constructing mine portals or shafts, excavating access and haulage roads from the mine site to a power source, and construction of a tipple and coal preparation plant. In view of these surface disturbances, a sediment pond must be included to collect the sediment from these activities. Therefore, the Office has retained this Section.

The preamble discussion for Section 816.46 is incorporated herein by reference.

§ 817.47 Hydrologic balance: Discharge structure.

The authority for this Section is found in Sections 516(b) (7), (9), (10), and (11) of the Act, in addition to all

Sections of the Act cited earlier in the preamble to Section 816.47.

The basis and purpose of this Section are the same as those offered earlier in this preamble for Section 816.47 except that the references to other Sections should be to the comparable provisions for underground mines. All public comments discussed in the portion of the preamble relating to Section 816.47 were considered and similarly disposed of, with respect to Section 817.47, because the Office believes no difference in the mining methods requires differences in discharge structure requirements between structures associated with surface mining and those associated with underground mining.

§ 817.48 Hydrologic balance: Acid-forming and toxic-forming materials.

(1) The authority for this Section is Section 516 of the Act, and authority cited under the preamble to Section 816.48. To account for underground development waste which is unique to underground mining activities, this Section is adopted to apply to acid-forming and toxic-forming underground development wastes and spoil. The basis and purpose for this Section are generally the same as those described for Section 816.48.

(2) The issues raised and comments received regarding this Section were similar to and discussed under the preamble to Section 816.48.

§ 817.49 Hydrologic balance: Permanent and temporary impoundments.

(1) The authority for this Section is found in Section 516(b) (5), (6), (7), (9), (10) and (11) of the Act, in addition to all Sections of the Act cited in the preamble discussion of Section 816.49. The basis and purposes of this Section are the same as for Section 816.49 of this Subchapter. All public comments discussed in the portion of the preamble relating to Section 816.49 were considered, and similarly disposed of with respect to Section 817.49 because there is no basis for a difference in the permanent and temporary impoundment requirements for structures associated with surface mining or the surface effects of underground mining.

In addition to the comments discussed in the Preamble portion relating to Section 816.49, one commenter recommended that Section 817.49(a) be eliminated from the final rules because the major concern with permanent impoundments focused exclusively on those impoundments left after surface mining operations. This was not accepted and the requirements covering any permanent impoundments associated with underground mining operations were retained in the final rules. It is anticipated that there will be cases when impoundments are constructed to provide a water source for underground mining operations and some of these impoundments may be left as permanent structures. If this occurs, these regulations will apply to the structures, whether or not the regulations of the Corps of Engineers or Environmental Protection Agency apply.

§ 817.50 Hydrologic balance Ground water protection.

1. Section 817.50 provides the protection of the mining area's hydrologic balance by requiring that mining operations be conducted so as to preclude uncontrolled discharge of mine water. Uncontrolled discharges (mine drainage) have been a primary cause of adverse impacts upon water quality and ecology in the past (Biesecker and George, 1966, pp. 5–8; Broley, 1954, 3 pp.; Grubb and Ryder, 1972, pp. 16–58; Sidio and Mackenthun, 1963, pp. 16–21; Turner, 1958, pp. 45–46; Warner, 1973, p. 227).

However, this problem can be controlled in underground mines through the proper location, design, construction, utilization, and sealing of drifts, adits, and slopes (EPA, 1973b, pp. 30–34). Use of some of these methods to control drainage during the active mining phase is to be supplemented with collection and conveyance of drainage to treatment facilities as necessary to comply with applicable standards and limitations prior to discharge to receiving streams.

The outright prohibition on gravity discharges at Section 817.50(c) from certain drift mines is required under Section 516(b)(12) of the Act.

2. The Office considered requiring all drift mines which are opened after the effective date of this Part to comply with Section 817.50(c), rather than making the requirements applicable only to mines opening after approval of the State or Federal program. The Office believes that until a regulatory authority is identified and approved by the Secretary and empowered to administer a regulatory program, it will be unfair to the operator to make this provision apply. Determination of whether a coal seam involved is "acid-producing" or "iron-producing" would not have been made until a permit application was reviewed by the regulatory authority.

3. A few commenters suggested that for drift mines which lie above drainage, that solid coal barriers of 50 feet plus one foot of potential hydrostatic head at all points around and above the workings be required. The Office recognizes that certain States require such standards as efforts to control acid drainage. However, the Office rejected this proposal, because such site-specific techniques are not appropriately applicable nationwide, particularly in the west where underground mining may not produce acid drainage. The provisions of Sections 817.41, 817.42, 817.48, 817.50, and 817.55 are extensive enough in scope to adequately cover the drainage situations raised by the commenters. Of course, Section 516(b)(12) of the Act and Section 817.50(c) specifically prohibit a gravity discharge of water from new drift mines.

§ 817.51 Underground mining: Protection of ground water recharge capacity.

As explained in the preamble to the proposed rules (43 FR 41780), the Office did not believe it appropriate to promulgate a regulation concerning restoration of recharge capacity with respect to underground mining activities. However, comments were solicited as to whether any requirements may be needed to protect the recharge capacity of water bearing formations from underground mining activities. One comment was received on this point in support of deleting this Section. The Section has not been included in the final rules.

§ 817.52 Hydrologic balance: Surface and ground water monitoring.

(1) Authority for this Section is derived from the same Sections of the Act as for Section 816.52 and from Section 516 of the Act.

(2) Most comments and issues relating to this Section were similar to those raised as to Section 816.52 and are discussed in the Preamble to that Section.

(3) Several commenters questioned whether quantity monitoring of surface discharges from underground mine permit areas following reclamation is necessary, in view of the small area disturbed relative to surface mining operations. The Office concurs with the commenters that, where the surface disturbed areas is relatively small the impact to the hydrologic balance following mining should be negligible. Where this is the case and the disturbed areas have been regraded and stabilized, it makes little sense to require the monitoring of surface flows (quantity) even though quality would need to be continuously monitored. However, no change in wording was deemed necessary, as Section 816.52(b)(2) provides for sufficient flexibility to the regulatory authority to limit or reduce water quantity monitoring in the circumstances suggested.

§ 817.53 Hydrologic balance: Transfer of wells.

Authority for this Section is Section 516 of the Act and those provisions cited in the preamble to Section 816.53. That portion of the preamble also explains the general basis and

purpose of this Section. All comments received and issues raised were similar to those comments and issues on Section 816.53 and are discussed in the preamble to that Section.

§ 817.54 Hydrologic balance: Water rights and replacement.

1. Authority for this Section is the same as that for Section 816.54, and in addition Section 516 of the Act. Most comments and issues raised as to this Section were the same as those raised as to Section 816.54 and are discussed in the preamble to that Section.

2. Several comments questioned whether Section 717 of the Act authorizes Section 817.54 as a regulation of the effects of underground mining on underground water. Since it was the intent of Congress for this Act to apply to underground mining as well as to surface mining, the Office has decided not to delete the Section.

Section 515(b)(10) of the Act requires surface mining to "minimize the disturbances to the prevailing hydrologic balance at the mine site and in associated offsite areas and to the quality and quantity of water in surface and ground water systems. . . ." Section 508(a)(13) requires mining and reclamation plans, in general, to provide for protection of surface and ground waters, including "rights of present users to such water." Sections 516(b)(10) and 516(d) of the Act incorporate provisions of Section 508 and 515, by referencing regulation of underground mining activities and allowing for any "distinct differences" in underground mining. There are no "distinct differences" justifying elimination of Section 817.54.

If anything, underground mining can have a more severe impact on users of surface and ground water than surface mining activities, as is evident from the technical literature cited in the preamble to the proposed rules, 43 FR 41780 (discussion of Sections 817.41–817.57) and 41784–41785 (GAI, 1977, pp. 22–23; Dunrud, 1976, p. 61). Therefore, the Office interprets Section 717 of the Act to require establishment of this performance standard since underground mining can have such impacts on users of water.

3. A commenter felt that the Section should be changed to explicitly provide that the operator would have to replace the water supplies of permittees for grazing on public lands, if the mining operation diminished those supplies. The Office rejected this proposal as it believes, first, that permittees' water supplies for grazing would be included under ". . . water supply of an owner of interest," and, second, is specifically covered under provisions of Section 715 of the Act, and 30 CFR 742.

§ 817.55 Hydrologic balance: Discharge of water into an underground mine.

1. Section 817.55 provides protection of the hydrologic balance of a mining area by restricting the discharge or diversion of water from surface mines or from one underground mine area into other underground mine workings. The basic authority for this Section is the same as for Section 816.55 and, in addition, Section 516 of the Act. Section 817.55(d) was inserted to recognize the possible transfer of water from one underground mine area to another. Co-mingling of surface water and ground water or from two or more sources of ground water may unexpectedly occur as a result of a strip mine intercepting an underground mine or waters from one underground mine breaking through into another (USEPA, 1973(b), p. 207; *Commonwealth of Pennsylvania* v. *Harmar Coal Co.*, PA Sup. Ct. (1974). For example, the elevation of shallow ground water in a southeastern Ohio surface mine area dropped about 100 feet as a result of water breaking into a dry mined out area below (Bureau of Mines, 1977b, pp. 50–51).

2. The issues raised by comments on Section 817.55 regarding (1) the need for approval by the Mine Safety and Health Administration; and (2) the need for an exception for pH effluent limitations in the discharge into underground workings, are identical to issues raised under Section 816.55, and the same modifications have been made to both Sections.

3. A commenter questioned the meaning of the opening paragraph for Section 817.55, as to whether it dealt with underground workings in the same mine or others. The commenter felt that the "blanket approach" was not applicable to the entire underground mining industry. The Office recognized this language problem and, therefore, specified "surface" mines in the final rule. The Office's intent is discussed adequately in the preamble to Section 816.55 it excludes diversions and discharges from either surface and underground mines into other underground mines, unless certain pollution abatement criteria are demonstrated to the satisfaction of the regulatory authority.

§ 817.56 Hydrologic balance: Postmining rehabilitation of sedimentation ponds, diversions, impoundments, and treatment facilities.

The authority for this Section is found in Sections 516(b)(4), (5), (6), (7), (9), (10), and (11) of the Act in addition to all Sections of the Act cited in the preamble discussion of Section 816.56.

The basis and purpose of this Section are the same as for Section 816.56 of this Subchapter. All public comments discussed in the portion of the preamble relating to Section 816.56 were considered, and similarly disposed of, with respect to Section 817.56, because the Office believes there is no difference between surface and underground mining which would justify varying rehabilitation requirements between structures associated with surface mining and underground mining.

§ 817.57 Hydrologic balance: Stream buffer zones.

1. Authority for this Section is the same as for Section 816.57 and, in addition, Section 516 of the Act. Most comments and issues raised relating to this Section were similar to those raised as to Section 816.57 and have been discussed in the preamble to Section 816.57.

2. A few commenters questioned the applicability of the buffer zone provisions to underground mines. One alternative considered was deletion of this Section on the basis of comments that underground mine workings do not affect surface streams. A second alternative would have left the provision as proposed, because both surface operations and underground mine workings located too close to streams may cause problems. A third alternative considered was to modify the provision to recognize any differences between surface and underground mines as to their effects on streams and the need for buffer zone markers in the underground workings.

The Office rejected the first two alternatives in favor of the third. Biologically significant streams need protection from surface disturbances of underground mines caused by coal dust and sediment production along haul roads, the discharge of mineralized water from processing plants or underground sumps, and the disruption of overland-runoff patterns caused by ditching (Karr and Schlosser, 1977, pp. 16-29; Grim and Hill, 1974, p. 102; Weigle, 1965, 23 pp.). Because of the adverse environmental effects to streams which may be generated by surface operations and facilities, the Office decided to require the use of stream buffer zones under Section 516 of the Act. The Office believes that Sections 817.121–817.126 (subsidence control) adequately protect surface streams from adverse effects of underground mine workings themselves.

§ 817.59 Coal recovery.

This Section addresses two persistent problems of coal mining: (1) The loss of coal resources when mining does not recover all the coal at a particular mining site; and (2) Recurrent environmental degradation when land

is reopened for mining to recover the remaining coal.

The authority for this Section is found in Sections 102, 201, 501, 503, 504, 510, and 516 of the Act.

Discussion of specific language and alternative language to require fixed percentages of coal recovery are in the preamble discussion of Section 816.59 to which the reader is referred for a discussion of issues relevant to this Section.

One comment was received suggesting that specific percentages of coal recovery be required. This comment was rejected for the reasons explained in the preamble to Section 816.59.

One commenter suggested that OSM should not promulgate a standard for coal recovery of underground mining, on the grounds that the Act did not authorize Federal coal recovery standards for deep mines, citing Section 517(a) of the Act limiting inspections to strip mines. OSM has rejected this suggestion on the basis that Section 515(b)(1) itself, and as applied through Section 516(b)(10), requires coal recovery standards for deep mines. Moreover, OSM feels that Section 517(a) of the Act authorizes inspections of underground mines. Section 517(a) authorizes inspection of "surface coal mining and reclamation operations." This phrase is defined by Section 701(28) of the Act and Section 700.5 of these regulations to include the surface effects of underground mining. The amount of coal recovered has an effect on the surface in that maximum recovery can preclude the need to redisturb the surface at a future date, a primary objective of this Section of the regulations. Maximum recovery from an underground mine may be a smaller percentage of the total coal than would be recovered using surface mining methods if such methods were feasible for the specific site.

It is understood that the operator must strike a balance between this requirement to maximize coal recovery and the requirements of Sections 817.121-.126 dealing with subsidence control. Both the coal recovery plan and subsidence damage control plan must be approved by the regulatory authority.

§ 817.61-817.68 Use of explosives.

These Sections are promulgated under the authority of Sections 102, 201, 501, 503, 504, 507, 510, 515, 516, and 719 of the Act. Most of the provisions of these regulations are substantially identical to the blasting performance standards regulations for surface mining activities (Sections 816.61-816.68). To that extent, the reader is referred to the appropriate portions of the preamble for Part 816, which contains the rationale, in general, for parts of Sections 817.61-817.68 which are not specifically discussed in the preamble to Part 817.

§ 817.61 Use of explosives: General requirements.

Numerous comments were received which pertained specifically to Section 817.61. As a result of these comments, the following alternatives were considered and alternatives two, three and four were adopted by the Office.

1. Retain the wording of Section 817.61(a) as proposed.

2. Revise Section 817.61 to restrict Section 817.61-817.68 to only surface blasting activities incident to underground mining, including construction of initial rounds of slopes and shafts. As a result of such an addition, portions of Section 817.65(a) of the proposed regulations would become unnecessary.

3. Delete reference in Section 817.61(a) to Sections 816.61-816.68.

4. Delete Section 817.61 of the proposed regulations, which required a blasting schedule for surface blasting incident to underground mining.

Alternative 2—Numerous commenters have pointed out an obvious ambiguity in the proposed blasting regulations for underground mining. Although proposed Section 817.65(a) stated that the provisions of that Section applied only to blasting conducted on the surface, that distinction was not made for the rest of Sections 817.61-817.68. Adoption of alternative two clarified the Office's intent not to regulate blasting performed underground, because this activity is adequately controlled by MSHA. By adding Section 817.61(a) to the final rules, proposed Section 817.65(a) was made unnecessary and was changed in the final rules.

Alternative 3—In response to comments that underground mining activities should not be subject to all requirements of Sections 816.61-816.68, the Office revised Section 817.61(a) so that the final rules require underground mining activities to comply only with Sections 817.61-817.68, which have been appropriately tailored solely for those activities.

Alternative 4—Several commenters objected to the requirement of the proposed rules for a blasting schedule for surface blasting incident to underground mining. The Office agrees because it was not the intent of Congress to require a blasting schedule for this type of blasting. Section 817.65(a), requiring a 24 hour notification for blasts of this type, is adequate protection for the public, given the limited frequency and duration of surface blasting associated with underground mining activities.

One commenter pointed out that MSHA's proposed rule, Section 77.1308(i), will allow blasting at night in slopes and shafts at underground operations except for the initial rounds on the surface. The Office finds no conflict with MSHA's proposed rule, as the Office does not regulate blasting under Part 817 inside underground mine workings. Initial rounds of slopes and shafts have been provided for in final Section 817.61(a) which regulates surface blasting for underground mining.

§ 817.62 Use of explosives: Preblasting survey.

A few commenters recommended limiting the area in which preblast surveys are required for surface blasting associated with underground mining to a one-half mile radius from the blasting activities, as provided for in Section 515(b)(15) of the Act. The Office accepted these comments, because there was no apparent basis to expand the area for mandatory preblast surveys from surface mining (one-half mile) for underground mines (any portion of the mine).

§ 817.65 Use of explosives: Surface blasting requirements.

(1) Several comments were received concerning the 24 hour notice required for surface blasting in support of underground mining in the proposed rules. As a result of these comments the following alternatives were considered and alternative 2 was adopted—

1. Retain the wording as published in the proposed regulations.

2. Modify Section 817.65(b) by inserting "approximately" in front of "24 hours" and inserting "surface" in front of "blasting event."

3. Change the Section to require a notice at least 10 days, but not more than 20 days, prior to blasting.

4. Delete the Section.

Alternative 2. One commenter objected that the notice of blasting was required to be given exactly 24 hours prior to blasting. As this would not be necessary or practical if there are a large number of surrounding residents to be notified, the word "approximately" has been added to qualify the advance notice requirement.

Alternative 4. The same commenter also questioned the Office's authority to promulgate blasting regulations for underground mines, because blasting is not one of the subjects listed in Section 516(d) of the Act. However, Section 516(b)(10) of the Act makes all of the performance standards of Section 515 of the Act applicable to "other surface impacts" not specified in Section 516(b) of the Act, thereby incorporating, by reference, Section 515(b)(15) of the Act. Further, Section 516(d) of the Act makes the permit application requirements of Title V of the Act applicable to underground mining. Under the permit application

requirements at Section 507(g) of the Act, there is a requirement that the applicant establish how the blasting provision of 515(b)(15) of the Act will be met. Therefore, the Office does have the authority to promulgate rules for surface blasting at underground coal mines that are in accordance with Section 515(b)(15), as modified so as to accommodate any distinct difference between surface and underground coal mining.

Surface blasting associated with underground coal mining, as compared to surface mines, commonly involves a lesser quantity of explosives and is not of such a continuing nature as for surface mining activities, because smaller surface areas of overburden removal are involved. However, underground mining activities do involve substantial blasting for road or facilities construction, "facing-up" operations for installation of adits, and initial blasts for slopes and shafts. The environmental impact of these generally smaller blasts, conducted for a shorter time period, is less severe than the legislative history indicates for surface mining blasts. Therefore, the provisions of Section 515(b)(15)(A) of the Act required modification as applied to underground mining activities. In the Office's judgment, a notification of blasting approximately 24 hours in advance of the blast will provide adequate notification for the infrequent type of blasting involved.

Alternative 3. One commenter recommended that notifying residents within ½ mile at least 10 days, but not more than 20 days, prior to any blasting event be required only for "facing-up operations," on the theory that this modification would conform Part 817 to proposed Section 816.64(a). Section 816.64, however, requires publishing a blasting schedule in the local newspaper for *all* types of blasting. Because there was no basis shown by the commenter to distinguish among the types of blasting in surface work in underground mining, the Office rejected the comment.

(2) *§ 817.65(d).* One commenter requested clarification as to which underground mining activities require maintenance of signs under Section 817.11(f). In response, the Office has clarified the wording of this Section to specify persons who conduct surface blasting incident to underground mining. The commenter correctly noted that, as proposed Section 817.65(d) would have required any person conducting underground mining activities to comply with all of the provisions of Section 817.11(f).

§ 817.68 1. Use of explosives: Record of blasting operations.

1. A few comments specifically directed to the blasting record requirements of proposed Section 817.68 were received. Some commenters felt that it was unclear whether Section 817.68 applied to blasts fired underground. However, the wording of Section 817.61(a) in the final rules makes it clear that only blasts fired on the surface and initial rounds in construction of shafts and adits are subject to the provisions of Section 817.68.

(2). One commenter suggested that a threshold size of blast be specified below which a blasting record is not required. The Office rejected this suggestion. As is discussed in detail in the preamble to Section 816.61, blasting involving the use of more than five pounds of explosives needs to be closely regulated, because of the potential for damage and harm to the public. In order that the regulatory authority can properly evaluate whether the requirements of the regulations specifying procedures and standards for blasting of over five pounds are being complied with, it is necessary that the identity, location, duration, types, and amounts of explosives used be recorded. These items will establish whether the operator, is, in fact, blasting with more or less than five pounds. Furthermore, the number and types of holes and description of delays used are appropriate means for cross-checking the claims of the operator in the total weight of explosives used per blast. Finally, other data required by Section 816.68 are useful to establish a historical data base by which the operator can predict how to conduct blasting over time.

§ 817.71–817.74 Disposal of underground development waste and excess spoil.

Authority for these Sections is found in Sections 102, 201, 501, 503, 507, 508, 510, 515, and 516 of the Act.

The basis and purpose of these Sections are the same as for Sections 816.71–816.74 of this Subchapter. All public comments discussed in the portion of the preamble relating to Sections 816.71–816.74 were considered and similarly disposed of with respect to Sections 817.71–817.74, because the Office believes that the differences between underground and surface mining do not justify differences in the coal development waste and excess spoil disposal requirements between structures associated with surface mining and those associated with underground mining. In effect, the Office believes that disposal of underground development wastes pursuant to these Sections will provide, and is necessary to insure, the same level of protection for the environment and public health and safety as is required for the disposal of excess spoil associated with surface mining.

The reader is referred to Sections 816.71–816.74 for a discussion of comments and issues relative to Sections 817.71–817.74.

§ 817.81–89 Coal processing waste banks and disposal of non-coal waste.

Authority for these Sections is found in Sections 102, 201, 501, 503, 504, 507, 508, 510, 515, and 517 of the Act.

The basis and purpose of these Sections are the same as for Sections 816.81–816.89 of this Subchapter. All public comments discussed in the portion of the preamble relating to Sections 816.81–816.89 were considered and similarly disposed of with respect to Sections 817.81–817.89, because OSM believes that the differences between surface and underground mining do not justify differences in the waste disposal requirements between structures associated with surface mining and those associated with underground mining.

The reader is referred to Sections 816.81–816.89 of the preamble for a discussion of comments and issues relative to Sections 817.81–817.89.

§ 817.91–817.93 Coal processing waste: Dams and embankments.

The authority for these Sections is found in Section 516 of the Act, in addition to Sections of the Act cited in the preamble discussion of Sections 816.91–816.93.

The basis and purpose of these Sections are the same as for Sections 816.91–816.93 of this Subchapter. All public comments discussed in the preamble relating to Sections 816.91–816.93 were considered and similarly disposed of, with respect to Sections 817.91–817.93, because OSM believes that the differences between surface and underground mining do not justify differences in the coal processing waste dam requirements between structures associated with surface mining and those associated with underground mining.

§ 817.95 Air resources protection.

The basis and purpose of this Section are the same as for Section 816.95 of this Subchapter. All public comments discussed in the preamble to Section 816.95 were considered and similarly disposed of with respect to Section 817.95. The statutory authority for this Section is the same as that for 816.95 with the addition of Section 516 of the Act. Consideration of whether underground mines should be regulated differently than surface mines with respect to air pollution control is discussed in the preamble to 30 CFR 784.26. Fugitive dust control techniques are the same whether the dust originates from surface or underground mines and therefore Section 817.95 is identical to Section 816.95.

817.97 Protection of fish, wildlife, and related environmental values.

This Section is essentially identical to the corresponding Section of Part 816. Refer to the preamble to Section 816.97 for information concerning the technical basis, alternatives considered, statutory authority and responses to comments addressing that Section. The discussion in the preamble supporting Section 816.97 also applies to Section 817.97. In addition to those authorities listed in preamble to Section 816.97, this Section is also supported by Section 516 of the Act.

The only issue raised by commenters in this Section which differed from Section 816.97 centered around the geographic area to be studied and which plans would be required for purposes of fish and wildlife resources protection. For a discussion of those differences see Sections of the preamble dealing with area to be studied, and fish and wildlife plans, Sections 779.20(a), 780.16(a)(1), 783.20(a), and 784.21(a)(1). Once the geographic area of study has been established and the fish and wildlife plan approved, the performance standards are identical.

No other differences in requirements of this Section and Section 816.97 were identified.

§ 817.99 Slides and other damage.

This proposed Section is substantially identical to the corresponding Section of Part 816. The reader is referred to the appropriate portions of the preamble for Part 816 for information concerning this Section. In addition to the Sections of the Act cited in those portions of the preamble, this Section is based on Section 516 of the Act. The Office considers the risks of slides to be sufficiently similar in surface and underground mining to warrant identical performance standards.

§ 817.100 Contemporaneous reclamation.

The authority for this Section is found in Sections 102, 201, 501, 503, 509, 510, 515, and 516 of the Act.

The basis and purpose of this Section are the same as Section 816.100 of this Subchapter. All public comments discussed in the portion of the preamble relating to Section 816.100 were considered, and similarly disposed of, with respect to Section 817.100. The Office believes that the differences between surface and underground mining do not justify differences in contemporaneous reclamation requirements between surface and underground operations affecting the surface. The reader is referred to Section 816.100 for a discussion of issues relative to Section 817.100.

§ 817.101–817.103 Backfilling and grading.

1. Sections 817.101–817.102 are regulations for backfilling and grading of areas disturbed by underground coal mining activities. Disturbed areas are to be reshaped to approximate original contour in a manner that minimizes erosion and water pollution and prevents slides. A level of surface productivity equal to that attained prior to mining and under proper management is to be achieved on this restored area. Authority for these Sections is found in the Act in Sections 102, 201, 501, 503, 504, and 516.

2. In Section 817.102 and 103, several commenters requested a change which would allow final graded slopes to be consistent with an approved post mining use plan rather than the stipulated pre-mining slopes or lesser slopes approved by the regulatory authority, where mining activities are reaffecting previously mined lands. Section 515(b)(3) of the Act clearly states ". . . to restore the approximate original countour of the land with all high walls, spoil piles and depressions eliminated." Section 516(b)(10) of the Act calls for surface disturbance of underground mining activities to operate in accordance with the standards established under Section 515 of the Act. Section 817.102(a) allows for modification of this requirement where mining activities are reaffecting previously mined lands that have not been restored to the standards of the Section. Since the commenters provided no further technical justification the language for this Section is retained.

3. Some commenters requested that Section 817.102(a)(2) be revised to include slopes which exeed 50%, as in Section 817.102(b)(3). Section 817.102(b)(3) refers only to terrace cut slopes. Spoil slopes are to be graded to the most moderate slope possible. This is intended to avoid long slopes with over a 50% gradient. Grim and Hill, pp. 149–197, Section IX. The language change has been rejected.

§ 817.103(a)(1) and (a)(2) Toxic material.

Comments were received on Section 817.103 (a)(1) and (a)(2) requesting that an exemption be allowed from four-foot cover requirements over acid or toxic producing material. These Sections are substantially identical to the corresponding Sections of Part 816. The reader is referred to the preamble discussion for Sections 816.103(a)(1) and (a)(2) for information concerning the technical basis, and alternatives considered for Part 817, including the disposition of similar comments. In addition to Sections of the Act cited in those portions of Part 816 in the preamble, these Sections are based on Section 516 of the Act.

§ 817.103(b).

Comments were also substantially the same as those received on the corresponding Sections of Part 816. The reader is directed to the preamble discussion for Part 816 for the disposition of comments received on this Section. In addition to the Sections cited in the preamble to Part 816, Section 516 of the Act authorizes these Sections.

817.106 Regrading or stabilizing of rills and gullies.

This Section is substantially identical to Section 816.106. The reader is referred to Section 816.106 for information concerning the technical basis, alternatives considered, and statutory authority for the Section. In addition to the Sections of the Act cited in these portions of the preamble, this Section is based on Section 516 of the Act. The Office considers the need for correction of gullying to be sufficiently similar in surface and underground mining to warrant substantially identical performance standards.

§ 817.111–817.117 Revegetation.

1. These regulations are intended to ensure establishment of a diverse, permanent, self-generating vegetation capable of plant succession and at least equal in extent of cover to the natural vegetative cover. It will be necessary that underground mining operations stabilize and revegetate all lands affected by their operations.

These Sections are issued under the authority of Sections 102, 201, 501, 503, 504, 510, and 516 of the Act.

2. In response to public comments, these regulations differ from those for surface mining and those differences are discussed here. For additional discussion on the development of these regulations, the reader is referred to Part 816 for those Sections regulating activities that warrant substantially the same regulations.

3. Section 817.111 sets forth the general requirements for revegetating surface areas affected by underground mining operations. Persons conducting underground mining activities are required to establish a diverse and permanent vegetative cover on all areas disturbed by surface operations. The revegetation shall be in accordance with the plan and carried out in a manner that encourages prompt vegetative cover and productivity levels compatible with the approved post-mining land use.

Several commenters expressed concern that the revegetation requirements of Section 516(b)(6) of the Act were substantially different for underground mining as compared to surface mining and they argued that this difference warranted regulations that were substantially different. Since Section 516(b)(6) does differ from Section 515(b) (19) and (20), primarily by not requiring native vegetation of the same seasonal variety when revegetat-

ing areas disturbed by underground mining operations, the appropriate changes were made in Sections 817.111 and 817.112 to reflect that difference.

4. Some commenters contended that the Act required greater recognition of ecological principles and biological community dynamics. This suggestion was accepted and the language changed to require vegetation capable of self-regeneration and plant succession, in accordance with Section 516(b)(6) of the Act. For the same reason the proposed requirement of "the same seasonal variety" was deleted and changes were made to specifically list the vegetative requirements of the Act.

As mentioned above, Section 817.112 was changed to reflect the different vegetative species requirements of Section 515(b)(6) as compared to the requirements of Section 515(b) (19) and (20).

The Office believes that Sections 817.113 through 817.117 should be substantially identical to the corresponding Sections of Part 816. The reader is referred to the appropriate part of the preamble for Part 816 for information and discussion of the alternatives considered for these Sections.

§§ 817.121–817.126 Subsidence control.

The regulations on subsidence are intended to ensure that underground mining is conducted so as to protect the health and safety of the public, minimize damage to the environment, and protect the rights of landowners. The subsidence control regulations will reduce subsidence-caused material damage to the land surface by improving mining methods, as well as by maintaining the value and potential of the land.

Authority for these Sections is found in Sections 102, 201, 501, 503, 510, 516, 517, and 522 of the Act.

Technical literature relied upon in writing these regulations includes:

1. "Acid Mine Drainage and Subsidence-Health and Ecological Effects of Increased Coal Utilization," Hill, Ronald D. and Bates, Edward R., Resource Extraction and Handling Division, Industrial Environmental Research Laboratory-Cincinnati, U.S. Environmental Protection Agency, Cincinnati, Ohio 45278, 1977.

2. "A Comprehensive Program for Dealing with Mine Subsidence," ARC Report 73-163-1559, prepared by Michael Baker, Jr., Inc., Beaver, Pennsylvania, and the Institute of State and Regional Affairs. The Pennsylvania State University, Middletown, Pennsylvania, for the Appalachian Regional Commission, Washington, D.C., and the Pennsylvania Department of Environmental Resources, Harrisburg, Pennsylvania, 1976, Chapter 6, pages 49–51.

3. "Subsidence Engineers Handbook," National Coal Board (British), Production Department, London, 1966, 1974.

4. Architectural Measures to Minimize Subsidence Damage, ARC Report 73-111-2551, prepared by Michael Baker, Jr., Inc., Beaver, Pennsylvania, for the Appalachian Regional Commission, Washington, D.C., and the Pennsylvania Department of Environmental Resources, Harrisburg, Pennsylvania, 1974.

5. "Overview of Subsidence Potential in Pennsylvania Coal Fields," ARC Report 73-111-2552, prepared by HRB-Singer, Inc., State College, Pennsylvania, for the Appalachian Region Commission, Washington, D.C., and the Pennsylvania Department of Environmental Resources, Harrisburg, Pennsylvania, 1975.

6. Gray, R. E., Gamble, J. C., McLaren, R. J., and Rodgers, D. J., "State of the Art Subsidence Control," ARC Report 73-111-2559 prepared by General Analytics, Inc., ("GAI") Monroeville, Pennsylvania, for the Appalachian Regional Commission, Washington, D.C., and the Department of Environmental Resources, Harrisburg, Pennsylvania, 1974, part 2.

7. "Use of Photo Interpretation and Geological Data in the Identification of Surface Damage and Subsidence," ARC Report 73-111-2554, prepared by Earth Satellite Corporation, Washington, D.C., for the Appalachian Regional Commission, Washington, D.C., and the Pennsylvania Department of Environmental Resources, Harrisburg, Pennsylvania, 1975, pages 35–37.

8. "Local and State Regulatory Powers Dealing with Land Use and Construction in Subsidence Prone Areas," ARC Report 73-163-2557, prepared by Mullin L. Lonergan Associates, Inc., Philadelphia, Pennsylvania for the Appalachian Regional Commission, Washington, D.C., and the Pennsylvania Department of Environmental Resources, Harrisburg, Pennsylvania, 1975, Appendix A.

9. U.S. Congress, 95th, 1st session, House Rept. 95-128, 1977, Surface Mining Control and Reclamation Act of 1977, Report of the Committee on Interior and Insular Affairs, House of Representatives, to accompany H.R. 2, p. 126-10. U.S. Department of Interior, 1976, Final Environmental Impact Statement on Surface Subsidence Control in Mining Regions; U.S. Bureau of Mines FES 76-58, 90 p.

10. U.S. Department of Interior, 1976, Final Environmental Impact Statement on Surface Subsidence Control in Mining Regions: U.S. Bureau of Mines FES 76-58, 90 p.

11. National Coal Board, 1963, Principles of subsidence engineering: Production Department Information Bull 63/240, 21 p., London, UK.

12. Dunrud, C. R. 1976. Some engineering geologic factors controlling coal mine subsidence in Utah and Colorado: U.S. Geological Survey Professional Paper 969, 39 p.

13. Brauner, G., 1973, Subsidence due to underground mining: I. theory and practices in predicting surface deformation: U.S. Bureau of Mines Info-Circ 8571, 55 p.

14. Battelle Columbus Laboratories, 1975, A systems approach to underground mining: Phase I problem analysis and research recommendations, 282 p.

15. Campbell, J. A. L., Petrovic, L. J. Mallis, W. J., and Schulties, C. W., 1975, How to predict coal mine roof conditions before mining: Mining Engineering, October, pp. 37–40.

16. Vandale, A. E., 1967, Subsidence—a real or imaginary problem: Mining Engineering, September pp. 86–88.

17. Horn, G. H., 1977, Memorandum on subsidence requirements—coal: U.S. Geological Survey memo to mining supervisors.

18. Allen, A. S., 1976, Basic questions concerning coal mine subsidence in the United States: Assn. Engr. Geologists Meeting, April 1976, 19 p.

19. Amuedo and Ivey, "Ground Subsidence and Land use considerations over coal mines in the Boulder-Weld Coal Field, Colorado", Amuedo and Ivey Geological Consultants, 1975.

20. "Study and Analysis of Surface Subsidence over the mined Pittsburgh coal bed," report prepared for U.S. Department of Interior, Bureau of Mines under contract No. J0366047 by GAI Consultants Inc. Monroeville, Pennsylvania, July 1977.

21. Wardell, Kenneth, "Ground Subsidence and Control", *Mining Congress Journal*, January, 1969, pp. 36–43.

22. Kratzsch, Helmut, "Reduced Subsidence by Planned Extraction", Bergbau-Archiu (Essen), Vol. 25, No. 5, December 1964, pp. 15–21.

23. Panek, Louis A., "Methods and Equipment for Measuring Subsidence," Third Symposium on Salt, the Northern Ohio Geological Society, Inc., Cleveland, Ohio, 1966.

24. Voight, Barry and Pariseau, William, "State of Predictive Art in Subsidence Engineering," Journal of the Soil Mechanics and Foundation Division, Proceedings of the American Society of Civil Engineers, March, 1970, pp. 721–740.

25. Legget, R. F., "Duisburg Harbour Lowered by Controlled coal Mining," Canadian Geotechnical Journal, 9, 374, 1972, pp. 374–3832.

26. Brauner, Gerhard, "Subsidence Due to Underground Mining-2. Ground Movements and Mining Damage," U.S. Bureau of Mines Information Circular 8572, 1973–

27. "Bituminous Mine Subsidence and Land Conservation Act of 1966," Commonwealth of Pennsylvania (Department of Environmental Resources), Harrisburg, Pa.

28. Curtis, S. E., Talk Presented at the Roof Control Committee Meeting of the American Mining Congress Pittsburgh, Pa., September 18, 1968.

29. Dunrud, C. R., and Osterwald, F. W., 1978, Effects of coal mine subsidence in the western Powder River Basin, Wyoming: U.S. Geol. Survey Open-File Report 78-473, 71 p.

30. Osterwald, F. W., 1961, Deformation and stress around coal mine workings in Sunnyside No. 1 mine, Utah: U.S. Geol. Survey Prof. Paper 424-C, p. C348-353.

31. USGS, 1962, USGS relates geologic structures to bumps and deformation in coal mine workings: Mining Engineering, v. 14, no. 4, p. 63-68.

Section 516(b)(1) of the Act requires undergound mine operators to adopt measures consistent with known technology in order to prevent subsidence-caused material damage to the extent technologically and economically feasible. Room amd pillar mining is not prohibited. If no subsidence control measures are adopted, there is the possibility of material damage to private dwellings (National Coal Board, p. 46, 1974), gas and electrical utilities (GAI, 1977), sewers (National Coal Board, pp. 57-58, 1974) and water resources such as springs and farmland (Dunrud and Osterwald, p. 59, 1978).

In order to evaluate best the likelihood of material damage, it is desirable to conduct underground mining in a manner such that the time and extent of subsidence can be predicted in as precise a manner as possible. Damage caused by subsidence can occur many decades after mining (Dunrud and Osterwald, p. 6, 1978) because of long-term instability of mine pillars, indicating the need for proper subsidence control measures in order to "maximize mine stability." Subsidence effects can also extend off the mining site (National Coal Board, p. 16, 1974; Baker, pp. 40-42, 1974; HRB-Singer, p. 25; and Grey, *et al*, p. II-26, 1974) at angles (measured horizontally from the edge of mining) varying from 35 degrees to 70 degrees (Brauner, Vol. 1, p. 9, 1973) and may result in damage to structures not situated directly over the mining site.

Determination of on- and off-site subsidence potential requires consideration of coal thickness mined, mining geometry and dimensions, and the nature of overlying and underlying strata (National Coal Board, pp. 8-24, 1974; Brauner, Vol. 1, p. 6, 1973; GAI 1977; and Voight, pp. 723-30, 1970). Determination of the potential effects of subsidence on structures and other facilities requires consideration of subsidence-caused ground strains and deflections and the nature of the structures themselves (National Coal Board, p. 24, 1974; Brauner, Vol. II, p. 2, 1973; Voight, p. 740, 1970; and Pennsylvania DER, p. 59, 1966). Therefore, adequate definition of the time and extent of subsidence and the prevention of material damage require careful consideration of the value and use of the land surface, detailed knowledge of the geologic and mining characteristics of the site (Osterwald, p. C-349-53, 1961, p. 64, 1962), and proper attention to geotechnical design principles.

Technology is available to minimize and reduce subsidence-caused material damage for both the standard room and pillar mining method and other methods, such as longwall mining, which are currently used in this country. Excellent protection of sensitive surface features such as urbanized areas and important historic and cultural features or farmland can be achieved by refraining from mining underneath and adjacent to these features as, for example, provided in Section 817.57 with respect to certain streams. Similar protection is currently required in Pennsylvania for protected structures consisting of public buildings, dwellings, and cemeteries, when the mine operator cannot post bond or does not have an approved financial statement. (Penn. DER, p. 60, 1966). Similar protection is required by MSHA for oil and gas wells.

Control of surface subsidence with respect to other structures can be achieved through proper design of mining operations to leave supporting coal in place, when using the room and pillar method (Curtis, pp. 4-6, 1968). Protection of the surface can also be achieved when using longwall panel and pillar systems. (Wardell, p. 41, 1969). A large portion of a major harbor in Germany was lowered more than one meter with minimal subsidence damage by careful control of mining. (Legger, pp. 374-83, 1972). Simultaneous harmonic extraction of superimposed coal seams and special arrangements of the mine workings and overlying structures can be used to limit damage (Brauner, Vol. II, p. 23, 1973; Kratzsch, p. 15, 1964; Osterwald, pp. 349-53, 1961; USGS p. 68, 1962). Longwall mining commonly results in predictable and controlled subsidence that is 90-95 percent completed by the termination of mining (National Coal Board, p. 90, 1974; Wardell, p. 36, 1969; Voight, p. 739, 1970). Room-and-pillar mining, on the other hand, may result in subsidence at a much later date, especially when conducted at shallow depths (Amuedo and Ivey, IV-3, 1975, Dunrud and Osterwald, p. 43, 1978).

One measure which can reduce material damage from subsidence is to reinforce or design surface structures to resist the stress imposed on them by subsidence-caused ground movements (National Coal Board, p. 65, 1974; Voight, p. 720, 1970; and Brauner, Vol II, p. 15, 1973).

Another measure which can significantly reduce subsidence is placement of fill, whether hydraulically or pneumatically, behind a longwall face (Brauner, p. 33, 1973). Backfilling through surface bore holes has also been used by the Bureau of Mines in an attempt to limit subsidence over abandoned room and pillar mines (DOI, USBM, pp. 8-22, 1976).

Some commenters on the proposed regulations suggested deleting Sections 817.121-817.126 altogether, and allowing State regulatory agencies to establish individual regulations regarding subsidence. This alternative was rejected by the Office because Section 516(b)(1) of the Act specifically requires an operator to "adopt measures consistent with known technology in order to prevent subsidence causing material damage to the extent technologically and economically feasible . . ." and because the Office feels that the state of the art is such that minimum national standards can be set. In such circumstances, Section 501(b) of the Act mandates these regulations be promulgated. While a State can tailor its subsidence controls as it deems appropriate, within the limits set under Subchapter C of these rules, the Office believes that minimum national standards are appropriate to fulfill the statutory goals of protection against subsidence damage and to prevent operators in one State from having unfair competitive advantages. (See Section 102(g) of the Act).

A revision of Sections 817.121 through 817.126 has been made by the Office since the proposed regulations, based on numerous comments addressed in the paragraphs below. The major changes are: (1) deletion of proposed Section 817.123 on the basis that a preliminary survey at the request of the landowner is not required by the Act and would be burdensome to the operator without sufficient offsetting environmental or property protection values to warrant the burden; (2) deletion of proposed Section 817.125 because monitoring is expensive and burdensome, often does not contribute to the prevention of subsidence, and is not appropriate or necessary in all circumstances to achieve the purposes of the Act; and (3) proposed Section 817.124 is modified to strengthen surface owner and public protection from surface damage caused by mine subsidence.

Sections 817.121-817.126 must be read together with Section 784.20 which contains permit application requirements for the subsidence control

plan. The reader is encouraged to read the preamble discussion of Section 784.20 for a discussion of many issues relating to Sections 817.121-817.126.

§ 817.121 Subsidence control: General requirements.

Section 817.121 establishes general requirements for subsidence control. The basic principle of this Section is to require prevention of subsidence damage, to the extent that it is economically and technologically feasible, and to maintain the value and foreseeable use of surface lands. This Section allows planned or controlled subsidence, and specifies that room and pillar mining is not prohibited. It further obliges the operator to comply with the subsidence control plan of Section 784.20. All measures should take into account that often there is a long lag time between mining and subsidence damage appearing at the surface.

A sentence has been added to Section 817.121(a) to make the regulations agree with the Act, Section 516(b)(1), concerning room and pillar mining.

Section 817.121(b) repeats a reference to the permit section of the regulations and has been left as the introductory Section of this group of regulations to remind the user that underground mining activities must conform with the permit requirements relating to subsidence control.

Several comments on this Section stated that operators who own the surface above an underground mine, as well as the mine, should be exempt from subsidence control plans, and operators should be exempt in areas where the surface owner agrees to accept subsidence and damage to structures, either by formal waiver or by an unspecified form of agreement. This concept was rejected by the Office because Section 516(b)(1) of the Act specifically protects the surface environment for the present and future, regardless of ownership. The Act does not contemplate that private parties can, by contract or purchase of resources, void the Congressional mandate for environmental and other property protection.

Another commentor suggested that the regulations do not allow operators to prove that subsidence will not occur, nor do they establish liability for subsidence caused by previous operations in permit areas. This comment did not lead to any changes in the rules because subsidence of the surface over mined-out areas is a proven fact (Dunrud and Osterwald, pp. 40–43 and 77, 1978) and the Office has not been presented with any evidence that subsidence can be definitively precluded as a possibility in any circumstances. As for past mining, the current operator takes the land as he finds it, and if the likelihood of subsidence is increased during the current operation as a result of voids created earlier, that operation is as liable for the damage as though the increased likelihood resulted from natural conditions. Accordingly, the regulatory scheme has been developed to evaluate susceptibility of surface to damage and development of mitigating measures.

One commenter stated that underground operators should be required to conform to the same surface restoration standards as surface operators. This suggestion was rejected because it was beyond the scope of the specific requirements in Section 516(b)(1) of the Act, and because subsidence from underground mines and surface mining have significantly different effects on the surface. For example, topsoil removal, overburden stripping, and vegetative removal will all occur in surface mining but probably will not accompany subsidence, so that identical restoration measures are inappropriate. See the proviso in Sections 516(a) and 516(b)(10) of the Act.

Several comments suggested inserting standards for "planned" or "controlled subsidence" into the regulations, rather than specifying subsidence prevention and damage mitigation measures. These suggestions were rejected because longwall mining is not appropriate for all coal seams. It is very expensive when the coal seam is in excess of a 30 degree slope, and it is not economically feasible for all operations. The adequacy of the proposed longwall plan, if any, can be evaluated by the regulatory authority based on the submission under Section 784.20, and detailed technical standards in these rules would be voluminous, without adding materially to lessen the damage.

One comment was received which stated that Section 817.121 restricted methods of operation to the point of making them uneconomical. The Office feels that the wording ". . . economically feasible . . ." allows the operator a choice of mining methods.

§ 817.122 Subsidence control: Public notice.

Section 817.122 requires the operator to distribute the mining schedule by mail to all property owners and residents in the affected and adjacent areas, and specifies that each person shall be notified at least six months prior to mining beneath that person's property or residence. The mining schedule must include all future mining planned to occur which might cause subsidence damage to the property.

The six-month notification is provided so that the landowner will be informed of the potential for subsidence damage to the property prior to its being undermined. The six-month requirement allows a reasonable length of time prior to the earliest onset of subsidence so that damage-control measures may be implemented, and adverse effects of subsidence may be mitigated. The Office has not specified the maximum period before undermining within which the notice must be sent, but it is expected that regulatory programs will provide a reasonable period to ensure adequate protection for the surface owner. Notification to the landowner at the beginning of subsidence is not an acceptable alternative, since this would pose a direct and unanticipated danger to the life and property of the landowner. (GAI, 1974).

Utilities, municipalities, and industries must also be advised as to when disruptions are possible and must be allowed adequate time to protect against loss of power, gas, or water services. If landowners are to assure their rights by means such as insisting that proposed subsidence controls be modified, then they must be informed of the possibility of subsidence affecting their land prior to its occurrence and, in many cases, prior to mining.

Notification to landowners and residents by publication of the mining schedule in a newspaper, as proposed, has been deleted. Section 817.122 now only requires notification by mail. The Office believes that notice by mail is a reasonable and more reliable form of notification than publication in a newspaper. Newspaper notification is not required by the Act.

Suggestions to delete proposed references in Section 817.122 to premining surveys, and the probable effects on structures, were accepted. The Office believes that the premining survey would be potentially very burdensome on the operator, of minimal benefit, and is not specifically required by the Act. Accordingly, proposed Section 817.123, which provided for such surveys, has been deleted. (See discussion below). An itemization of the probable effects of subsidence on structures would most likely be so speculative or general as not to be useful to the property owner.

Suggestions to limit Section 817.122 to areas of longwall mining, planned subsidence and areas known to fail within 10 years, were rejected by the Office because Section 516(b)(1) of the Act specifically requires limitation of material damage from unplanned subsidence.

A request to change the notification time schedule to every 12 months was rejected. The Office believes a single pre-mining notice approximately six months before the mining will provide adequate warning to landowners and

other persons whose property is likely to be affected.

§ 817.123 [Deleted]

In the proposed regulations, Section 817.123, which has been deleted in these final rules, would have provided that the regulatory authority would, upon a request by an owner of any dwelling or structure within the mine plan area, require the operator to conduct and submit to the regulatory authority a premining survey. This Section also would have required a premining survey of all public buildings and structures in the mine area. These requirements were proposed to provide a baseline against which to measure damages that might occur. In this manner they protected both the surface owner and the operator. Special attention in the survey was to be given to the condition of water structures and systems used to supply human, animal, and agricultural needs. The operator would have been required to provide the surface owner and the regulatory authority with copies of the premining survey report. The report was to include a description of special conditions and proposed adjustments to the subsidence control procedures of proposed Section 817.122.

Some commenters on this Section suggested deleting the entire Section and allowing States to establish individual regulations. Other suggestions were that the premining survey be included in the subsidence control plan; that provisions be made for waiver of damage claims by granting severance deeds of record to the operator; that temporary dwellings such as tents, mobile homes, and the like be specifically exempted from the "dwelling" provision; that the surface owner request a survey directly from the operator, rather than from the regulatory authority; and that surveys should be limited to assessment of potential effects of future operations during the term of the permit.

During the period of consideration of public comments, the Office concluded that the Act does not require a premining survey and that to include such a requirement in the regulations would place an unwarranted burden on operators. It was further concluded that the optional nature of the proposed regulation which left the decision to the property owner of whether or not to request a survey did not provide a reasonable basis for evaluating ultimate liability for damage. For these reasons, and because of the reorganization of Sections 817.121–817.126 and the shift of emphasis in Section 817.124 to increased liability and restoration requirements following subsidence, proposed Section 817.123 has been deleted in its entirety. However, an inventory of surface features subject to material damage is now required under Section 784.20.

§ 817.124 Subsidence control: Surface owner protection.

Section 817.124 provides protection for the rights of owners of surface lands or structures by stipulating that underground operators shall use all measures approved by the regulatory authority to reduce, control, or prevent subsidence and subsidence-caused damage. Operators of mines that cause subsidence-related damage are required to mitigate the damage by restoration, rehabilitation, or removal and replacement of structures; purchase of the damaged structure or feature and restoration of surface to premining capability; or by providing surface owners with prepaid insurance to cover the amount of diminution in value caused by subsidence or other similar protection. In the case of land-use degradation caused by subsidence, operators are required to return the surface to a condition capable of supporting uses reasonably foreseeable before subsidence.

Dwellings or other buildings already constructed may be partially protected against subsidence by reinforcement of sensitive parts such as windows or doors and by isolating the structure from lateral ground movement by ditching around its periphery (National Coal Board, p. 65, 1974; and Voight, p. 737, 1970). New structures can be designed to resist subsidence by incorporating flexible superstructures, flexible pipelines with telescopic joints, special sliding or rigid raft type foundations and by locating the long axis of the building properly with respect to mining (National Coal Board, p. 65, 82, 1974; Pennsylvania DER, 1974; Vought, 737, 1970; and Pennsylvania DER, p. 62, 1966). The requirement to identify mining areas, dates and probable effects of surface subsidence (Sections 817.122 (a), (b) and (c)) will enable the landowner to implement precautionary measures.

Suggestions from commenters to require that insurance against subsidence damage be made available to affected persons in all cases were rejected, because the Office feels that such insurance may prove to be prohibitively expensive in some instances and not readily available in others. Accordingly, insurance is one alternative from which operators can choose to meet the requirements of this Section, but is not required.

Several comments on Section 817.124 questioned whether the underground operator should be required to protect surface structures or land in cases where the operator either owns the surface or has a specific waiver of damage. The Office has modified this Section because of the shift of emphasis in subsidence control imperatives but has retained the basic tenets of surface protection for both present and future owners, as mandated by the Act's requirement for maintenance of the surface's value and reasonably foreseeable future uses. (Section 516(b)(1) of the Act).

Several suggestions dealt with language of the proposed regulations. Most concerned the concept of consultation by operators with surface owners as provided in the proposed Section 817.124. As stated above, the Office's modification of this Section has incorporated alternatives to the "consultation" concept suggested by commenters by providing options for the operator and protection for the surface owner. This is consistent with the Act in that it recognizes that coal is necessary to meet our energy needs and also recognizes that the environment must be protected from the adverse consequences of mining.

Some commenters urged deleting Section 817.124 entirely and allowing States to formulate individual regulations regarding surface owner protection. These suggestions were rejected. The Office felt that to allow multiple and unrelated regulations would result in many programs with no predictable unifying theme or minimum criteria. Section 501(b) of the Act requires the Office to develop minimum procedures, which is what this regulation does. Further protection can be provided under the approved regulatory program. The Office believes that Congress enacted Section 516(b)(1) of the Act in part because State initiative has not in the past adequately met the subsidence damage problem. These rules intend to set the minimum standards for future State regulation. Section 817.124 is appropriate in that it provides options for the operator while providing protection to the surface owner and surface resources in accordance with the intent of the Act. The consultation requirement has been deleted because it presented no real protection, while affording the surface owner an opportunity unfairly to interfere with mining plans by refusing to consult.

A suggestion that underground mining should be prohibited in areas where subsidence cannot be prevented by known technology was rejected because its intent would far exceed the intent and plain meaning of the language of the Act. The Act recognizes that subsidence cannot always be prevented, but attempts to lessen the effects of subsidence, through planning. Section 817.124 has been redrafted to strengthen protection of the surface owner and surface values from damage caused by mining. This revised Section provides increased protection to the surface owner while still providing op-

tions to the mine operator, consistent with the intent of the Act that mining be allowed to proceed in most cases.

§ 817.125 [Deleted]

In the proposed regulations, Section 817.125 would have required operators to establish a scheme for monitoring the amount of subsidence caused by underground mining, and specified reports of subsidence to be updated periodically and given to the regulatory authority.

Many comments were received concerning this Section, all of which questioned the requirements of monitoring. After careful consideration, the Office has determined that monitoring programs are not specifically required by the Act; that monitoring can be expensive, as demonstrated by the Bureau of Mines and the Old Ben Coal Co. on a monitoring program in the Illinois coal basin; and that monitoring is a means of determining movement and not a reliable method of preventing or mitigating subsidence or resulting damage.

Accordingly, Section 817.125 has been deleted, and its intent of surface owner protection has been shifted to the more direct provisions of Section 817.124.

§ 817.126 Subsidence control: Buffer zones.

Section 817.126 provides protection for hydrologic structures, aquifers, public buildings, and communities by preventing underground mining beneath or adjacent to these structures where subsidence damage is likely to occur. The regulatory authority is given the option of determining where mining may be permitted.

Paragraph (a) provides for the protection of perennial streams and major impoundments (20 acre-feet or greater) from underground mining operations and gives the regulatory authority the option of allowing mining near these areas if it can be shown that subsidence will not cause material damage to these water features. It further provides for corrective measures to be taken if material damage from subsidence occurs as a result of mining operations.

Protection of aquifers serving as a significant source of water supply to any public water system is required by Section 817.126(b). Additional protection is provided in that the regulatory authority may suspend mining or limit the percentage of coal extraction where an aquifer may be subject to subsidence damage.

Public buildings are protected from adverse surface damage from underground mining operations in Section 817.126(c) by prohibiting mining beneath or in close proximity to these structures. This requirement may be waived by the regulatory authority if it can be shown that subsidence from mining beneath these structures will not cause material damage.

Section 817.126(d) provides the regulatory authority with the option of suspending underground coal mining in all of the above circumstances where there is a threat of imminent danger to inhabitants of urban areas, cities, towns or communities.

The Office feels that this Section provides an addtional level of protection to the public in and around areas of active underground coal mining.

One commenter suggested deletion of Section 817.126 to permit individual States to develop separate regulations. The Office feels that a single approach to protection of surface facilities will provide consistency of regulation, and, therefore, has rejected the suggestion.

Some commenters requested that the Office not regulate mining beneath intermittent streams. The Office has determined that to prohibit all mining under intermittent streams exceeds the intent of the Act (See Section 516(c) which authorizes suspension of mining under "permanent streams") and that the cost of implementing measures to prevent disturbance of intermittent streams is contrary to Section 516(b)(1) of the Act which requires implementation of measures which are "technologically and economically feasible." While the intermittent stream provision which appeared in the proposed regulations has been deleted from this Section as too broad (there was no depth beyond which it didn't apply), the operator still must comply with the buffer zone provisions of Section 817.57, if applicable to the stream in question.

Commenters suggested that only mining activity likely to cause subsidence should be regulated by Section 817.126 and that mining should be permitted under structures where planned subsidence would cause no damage, where surface owners were suitably compensated, or where a deed granting relief exists. These suggestions were rejected because language regulating only mining likely to cause subsidence violates the Act which calls for measures to prevent material damage, and the fact that its likelihood is remote does not warrant an exemption from the requirement. The regulations as written cover both planned and unplanned subsidence and provide protection to public buildings in accordance with Section 516(c) of the Act. The contents of a deed are irrelevant to preserving the value and forseeable use of surface features.

Comments suggesting that the volume of protected impoundments be reduced from 20 acre feet to five acre feet were rejected because the suggested volume is far too small to qualify as a major impoundment as specified in Section 817.49 and Part 77.216(a)(1) of MSHA regulations. The reader is referred to the preamble discussion of Section 816.49 for a discussion of the rationale for the 20 acre foot cut-off.

Commenters suggested that the regulatory authority be allowed the option of permitting mining under structures where it determined that no subsidence damage will result. This provision is now found in both Paragraphs (a) and (c).

The last sentence of Section 817.126(a) has been modified to require corrective action if damage is caused, in order to comply with Section 516(b)(1) of the Act, in a manner which does not restrict the operation to specific types of corrective measures. Now the measures most appropriate for the site can be implemented.

Section 817.126(b) has been modified in response to comments to read "any aquifer that serves as a significant source of water supply to any public water system." This suggestion was incorporated into the regulations since many towns and cities obtain significant portions of their water from more than one source. This modification provides additional protection to the public over the proposed rules which only protected aquifers which were the "sole" source of supply. Protection of private water supply wells affected by damaged aquifers is assured by Section 783.18 of these regulations.

Section 817.126(d) was added to implement Section 516(c) of the Act concerning the presence of imminent danger from mining operations.

Several comments were received concern in the term "adjacent" in Section 817.126(a). The Office feels that guidance as to the appropriate definition of this term can be found in Section 817.57 of the regulations and refers interested readers to the preamble discussion for that Section. Of course, State programs can more specifically define this concept as long as adequate protection for the water body is assured. The intent of the word "adjacent" is to prohibit activities which may cause subsidence in such proximity to streams and impoundments that the functioning of the feature might be jeopardized. As noted above, the angle of draw, within which subsidence can occur, may be as great as 70 degrees and should be taken into account in the context of determining appropriate distances within which not to mine.

§§ 817.131 and 817.132 Cessation of operations.

These Sections are substantially identical to the corresponding Sections of Part 816. The reader is referred to the appropriate portions of

the Preamble for Sections 816.131-816.132 for information concerning the technical basis and statutory authority for these Sections. In addition to the Sections of the Act cited in those portions of the Preamble, these Sections are based on Section 516 of the Act. All issues considered for Sections 816.131 and 816.132 were also considered for these sections and similarly decided. (Additional comments received on specific parts of Sections 817.131 and 817.132 are addressed below:)

Section 817.131(a).

Several commenters suggested the deletion of this paragraph entirely. However, temporary interruption in production operations still necessitates ventilating and maintaining underground entries and/or passageways, hence closure of surface access openings is not appropriate and would be unsafe and unacceptable. There are many areas in underground mines where production ceases at some normal phase of the total mine operations, which could fall in the temporary category as formerly proposed and yet still be required for total mine production. As a result, the wording "maintain all surface access openings" was added to make it clear tht a partial closing does not require complete shutdown.

Section 817.132(a).

Several commenters suggested that the phrase "this Chapter and according to" be deleted from Section 817.132(a). They contended that current State regulations for shaft and/or portal sealing together with an approved State regulatory program would suffice and not require the phraseology originally proposed. This suggestion was rejected. By deleting "this Chapter and according to", this Section could be interpreted as superseding the specifics contained elsewhere in this Chapter, including Sections 817.13, 817.15, 817.101-817.117 and others, which is not the intent.

Section 817.132(b).

Several commenters suggested various revision to this Section. The suggestion was made that only surface equipment, structures, or other facilities not required or approved shall be removed. This suggestion was accepted, as underground equipment, structures, and equipment should not have to be removed if their remaining poses no threat to the environment or public safety. Also, when an operation is ceased permanently all entrances to the underground mine will be sealed and the equipment should pose no threat to the environment or the health and safety of the public.

§ 817.133 Post-mining land use.

This Section is substantially identical to the corresponding Section of Part 816. The reader is referred to the appropriate portions of the preamble for Section 816.133 for information concerning the statutory authority, technical basis and alternatives considered for this Section. In addition to the statutory authority cited in Section 816.133, authority for this Section is found in Section 516 of the Act. The Office considers the needs for post-mining land use controls to be sufficiently similar to warrant substantially identical criteria for both surface and underground operations.

Several commenters raised issues related to specific sections of Section 817.133 which were also raised in connection with Section 816.133: These issues are discussed and resolved in the preamble to Section 816.133 and revised language has been incorporated in Section 817.133 where changes were also made in Section 816.133. These issues include objections to: (1) the phrase "and had been properly managed" in Sections 816.133(b) and 817.133(b); (2) the compatibility requirement of Sections 816.133(c)(1) and 817.133(c)(1); (3) the letter of commitment required under Sections 816.133(c)(4) and 817.133(c)(4) and (4) the inclusion of "other appropriate professionals" in Sections 816.133(c)(5) and 817.133(c)(5).

In addition, editorial changes in Section 816.133 made since the proposed regulations and changes made in connection with the Office's consideration of comments on Section 816.133 have also been made in Section 817.133. These changes include: (1) addition of "before permanent abandonment" in Section 817.133(c) (introductory paragraph); (2) the 60-day notice requirement in Section 817.133(c)(1) and (c)(8); (3) deletion of "needs" in Section 817.133(c)(2) and (4) the reference to the bonding regulations sections in Section 817.133(c)(9).

Some commenters suggested that the differences between surface and underground mining operations mandated that Sections 816.133 and 817.133 not be identical. Specifically, these commenters stated that Sections 817.133(b) and 817.133(c) should be revised to take into account the long life of an underground mine. The Office considered making revisions to Section 817.133 to reflect differences in underground mining as well as the alternative of making no change. Reviewers apparently overlooked the fact that each five year phase of an underground mining operation must be separately permitted. (Section 782.17). (There are exceptions if an operator can make the necessary showing under Section 786.25(a) of the regulations.) Thus, for most operations there are essentially no differences in planning post-mining land uses for the two types of mining. Therefore, while language has been added in Section 817.133(a) to reflect that surface land areas affected by mining (as opposed to "all affected areas") are of concern in underground operations, no other changes to this section were made.

§ 817.150-817.176 Roads.

These Sections have been developed to implement permanent environmental protection performance standards for the design, construction, reconstruction, utilization, maintenance, and restoration of roads at underground coal mining operations. These regulations are aimed at ensuring that the mine road operations will not pollute water resources, or damage fish and wildlife habitat, or public or private property. Authority for these sections is found in Sections 102, 201, 501, 503, 504, 515, 516, and 701 of the Act.

These sections are substantially like the corresponding sections of Part 816. The reader is referred to the appropriate portions of the Preamble for 30 CFR Part 816 for information concerning the technical basis, alternatives considered, rationale for the regulations adopted, disposition of comments, and statutory authority for these sections. Every comment received on the mine road regulations was looked at both from a surface and underground mining activity perspective and disposed of similarly for both mining situations.

Permanent regulations for roads used in connection with underground mining activities incorporate the three-tier road classification system. The definition of each class of road is found in 30 CFR 701.5 and is based upon the planned volume of traffic, speed, and weight of vehicle used above ground, outside of the underground mine workings. There is nothing in the nature of the kind of surface or underground coal mining activities that would lead to distinctly different road requirements and regulations for surface mines as opposed to deep mines.

The organization of the three types of road classifications are as follows:

Class I Roads—Sections 817.150-817.156

Class II Roads—Sections 817.160-817.166

Class III Roads—Sections 817.170-817.176

The correlation between the proposed regulations and the final regulations is shown in the following chart:

Subject	Proposed Final Regulations	Class I	Class II	Class III
General	817.31	817.150	817.160	817.170
Location	817.32	817.151	817.161	817.171

Subject	Proposed Final Regulations	Class I	Class II	Class III
Design and Construction (including erosion control)	817.33	817.152	817.162	817.172
Roads: Drainage	817.34	817.153	817.162	817.173
Surfacing	817.35	817.154	817.164	817.174
Maintenance	817.95[1]	817.155	817.165	817.75
Restoration of Roads	817.38	817.156	817.166	817.176

[1] Also includes: 817.31(a).

1. Many comments regarding roads carried the dual designation of both surface and underground mining. The disposition of these comments is discussed in the preamble for 30 CFR Part 816. The following additional comments limited only to roads related to underground mining, were also received:

2. A commenter suggested allowing variances for site-specific conditions on the grade requirements for pre-existing roads. This concern is covered by the existing structures provisions of 30 CFR 701.11(e), 784.12 and 786.21. This comment, all was considered in developing new requirements for the three classes of roads which are appropriately based on the volume of traffic, and the weight and speed of vehicles using the road. (U.S. Forest Service 1977 Sections 24; Parker, P.E. 1965 Fig. 1; Kaufman 1977. p. 19.)

3. Some comments objected to the requirement to crown or reslope a road to a drainage ditch. Others objected to a ½ inch per foot for crowning or resloping and proposed a ¼ inch standard. The reader is referred to the preamble discussion of 30 CFR 816.152(d)(10) and 816.162(d)(10) for information and rationale for changing to a ¼ inch standard.

4. A few comments expressed concern over the rigid 24-inch lift restriction proposed for road embankments. The comments urged greater flexibility for site-specific conditions and that a maximum lift thickness of 4-feet be allowed instead of 24-inches as proposed. Construction of embankments for roads in several States must be on 12-inch lifts. The Office has revised the standards to an upper limit of 36-inches for Class I and Class II Roads. The Office has not established lift standards for Class III Roads due to side cast construction procedures (Kaufman, 1977 fig. 18). The reader is referred to the Preamble discussion of Sections 816.150-816.176 for further information on this subject.

5. Some commenters objected to the word "horizontal" in proposed Section 817.33(c)(3) stating it is an unworkable condition to require a horizontal lift placement on a vertical grade. The Office recognized this problem and changed the language for Class I and Class II Roads to read, "spread in successive uniform layers."

6. A few comments objected to compaction requirements in Section 817.33(c)(5),(6). The reader is referred to the Preamble discussion of Section 816.152(d)(5)(6) and 816.162(d)(5)(6) for information and rationale for the final standard.

7. few comments suggested proposed Section 817.38(b) be deleted entirely. The comments suggested the removal and disposal of all road-surfacing materials was unnecessarily restrictive. The rationale was that road surfacing in many cases is a limestone or slag by-product and not asphalt. Therefore, complete removal of the nonasphalt material would be unnecessary. The Office did not believe a language change was needed. The interpretation of 30 CFR 817.156(b) and 816.166(b) is that unsuitable road material which is detrimental to vegetation establishment and growth shall be disposed in accordance with 30 CFR 817.89, and that other surfacing material may be sacrificed, topsoiled and revegetated if authorized by the regulatory authority.

§ 817.180 Other transportation facilities.

1. The authority, basis and purpose of Section 817.180 is the same as for Section 816.180 of Subchapter K, except that Section 516 of the Act provides additional statutory authority. The reader is referred to the preamble discussion of 30 CFR Section 816.180 for a discussion of issues relevant to Section 817.180.

This Section is intended to ensure that transportation facilities other than roads, which are located within the mine plan area are constructed, reconstruced, used and maintained in a way that furthers the environmental and other goals of the Act.

Section 817.180(a) identifies specific environmental situations which must be addressed by the mine operator during the design, construction and use of these transportation facilities. These performance standards will assure compliance with Sections 516(b)(9) and (11) of the Act.

Sections 817.180(b)-(d) addresses the minimization of damage to other related environmental values, also identified in Section 516(b)(11) of the Act, while Section (e) protects both public and private land owner interests from damage resulting from transportation facilities other than roads. The Office feels that these performance standards are necessary to assure the mine operator will comply with the full intent of the Act. This Section has been renumbered to Section 817.180 from Section 817.36 to be consistent with renumbering of Part 817 of the final regulations, while allowing it to immediately follow the rules related to roads, where it logically belongs.

2. One comment argued Section 817.80(d) should explicitly require compliance with 30 CFR 817.95, regarding air resource protection. Section 817.95(b)(1)-(19) specifically suggest some air pollution control measures which may be applicable. However, the particular facility may require other controls, and may require attention to pollution in addition to fugitive dust. Accordingly, the broader language of Section 817.180(d) has been retained, although Section 817.95 will also apply to these facilities.

3. A commenter recommended deleting all of Paragraph (d). This was not accepted because Sections 515(b)(4), and 508(a)(9) and 516(6)(10) of the Act specifically require compliance with applicable air quality laws and regulations and any applicable health and safety standards.

§ 817.181 Support facilities and utility installations.

1. The authority, basis, and purpose of this Section are the same as for Section 816.181 of this Subchapter, except that additional authority for this section is found in Section 516 of the Act. The reader is referred to the preamble discussion of 30 CFR 816.181 for discussion of issues relevant to this Section.

The literature, State laws and regulations considered in preparing this Section included those works cited or referred to in the preamble sections which discuss Sections 817.41-817.56, 817.111-117 and 817.131 and 132.

2. Support facilities as identified in Section 817.181(a) are considered for the purposes of these regulations to be the same as or similar to those facilities identified in 30 CFR 816.181(a). Discussion of each of the subparagraphs within this Section is the same as set forth for Section 816.181 in this Preamble.

Section 817.181 has been renumbered from Section 817.39 of the proposed regulations to be consistent with the renumbering of Part 817 and to keep it together with other regulations which relate to similar facilities.

All comments reviewed in the preparation of the final version of 30 CFR 816.181 were reviewed in the context of Section 817.181 and similarly disposed of, because the Office finds that the differences in surface and underground mining do not warrant different rules for these facilities and installations.

3. A commenter argued that the words "and related environmental values" in Paragraph 817.181(a)(1) should be deleted. The comment was justified on the grounds that related environmental values are undefined in the regulations and leaving the phrase

in the rule might lead to severe economic consequences for an operator. The phrase was not deleted, however, because it is the language used in Section 516(b)(11) of the Act, and state regulatory authorities are given the opportunity, in the first instance, to implement the full intent of that statutory Section. This is in keeping with the intent of Section 101 of the Act that the primary responsibility for developing regulation should rest with the States.

4. A commenter suggested the word "prevent" in Section 817.181(b) should be changed to "minimize". Sound engineering practice minimizes the interruption of electrical power lines shared by more than one customer, but does not guarantee that it will never happen. The suggestion was accepted and the language revised appropriately.

5. A commenter argued that the regulations in Section 817.181(b) should provide an exception when the applicant for a permit possesses a severence deed specifically granting subsidence relief. However, the Act requires minimization of adverse effects of mining including subsidence damage. The suggestion was rejected because agreements between private parties alone will not be permitted to undermine the protection of public values guaranteed by the Act. Accordingly, regulatory authority approval is required under the final phrase of Section 817.181(b) Subsidence is discussed in detail under Sections 784.20 and 817.121–817.126 of the final regulations.

6. A commenter indicated that utility services other than those listed should be protected. The Act refers to the protection of public property within the permit area, which may not be limited to the examples cited. Section 817(b) has been revised to recognize additional utility services, including water and sewage, and states are invited to add to this list of utilities in their State programs if additional facilities exist in coal regions within their borders.

Several commenters suggested deletion of Section 817.181(b). However, the Office has determined that this Section is necessary to meet the requirements of Sections 516(b)(1), 516(b)(7) and 516(b)(10) of the Act, with respect to underground coal mining operations.

PART 818—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS—CONCURRENT SURFACE AND UNDERGROUND MINING

This Part contains the applicable performance standards for any person who conducts or proposes to conduct a combined surface and underground mining operation in such a manner that the operation will not conform to the requirement for contemporaneous reclamation. This Part, together with Section 785.18, is designed to implement Sections 515(b)(12) and (b)(16) of the Act. The reader is referred to the Preamble discussion for Section 785.18 for a discussion of issues relevant to this Part. This Part provides for issuance of a variance for specific areas within the reclamation plan from the requirement that the reclamation efforts proceed as contemporaneously as practical, in order to permit underground mining operations to be conducted prior to reclamation. Any person who conducts or proposes to conduct a combined surface mining and underground mining operation which cannot conform with the requirement for contemporanous reclamation must obtain a variance as specified in this Part.

§ 818.1 Scope and 818.2 Objectives.

These Sections present the scope and objectives of this Part. Minor editorial changes have been made to clarify the versions of these Sections as proposed on September 18, 1978;

§ 818.4 Responsibilities.

This Section has been modified from the proposed regulations on responsibilities of persons engaged in mining. This change has been made to clarify how this Part applies to mining activities and does not represent a substantive change.

As stated in Section 818.11, the regulatory authority may approve a variance to the requirement for contemporaneous reclamation after the applicant shows the necessity for the proposed concurrent operations. Such a variance shall only be permitted for the area and for only such time as necessary to facilitate the underground mining operations. A cross-reference to Section 785.18 now has been added to help the reader find the applicable permit regulations.

Proposed Section 818.12 set forth the criteria for requesting a variance for a specific area within the permit area for combined surface mining and underground mining activities. Also, the proposed regulations contained a Section 818.13 which provided for review of variances granted under this Part. Both of these proposed sections have been deleted because they duplicated provisions in Section 785.18 and are therefore unnecessary.

§ 818.13 Compliance with variance terms.

This Section, which was proposed Section 818.15, states that each person granted a variance under this Part shall comply with all the requirements under 30 CFR 785.18 and with all applicable performance standards of this Subchapter and the regulatory program. Any delay in compliance must proceed as authorized by the permit variance and shall achieve the purposes for which the variance is granted. As proposed, the term "non-compliance" was used where "delay in compliance" appears in the final rule. This change was made to emphasize that reclamation must eventually be accomplished and that this variance does not excuse compliance forever, but only so long as necessary to facilitate underground mining.

§ 818.15 Additional performance standards.

This Section, proposed as Section 818.16, sets forth additional performance standards. A 500-foot barrier pillar of coal is required to be maintained between active or abandoned surface and underground mining operations as required in Section 515(b)(12) of the Act. Permission for variance to this requirement must be obtained by the applicant in order to conduct concurrent surface and underground mining operations. Such a variance must be approved by the regulatory authority and the Mine Safety and Health Administration (MSHA), only after finding that a variance to the 500-foot barrier pillar of coal is necessary to improve recovery of mineral resources, for abatement of water pollution, or for elimination of hazards to the health and safety of the public. One commenter suggested that Sections 818.15(a)(1) and 818.15(a)(2) be joined by the conjunction "or." This change would clarify that the regulatory authority has the latitude to consider a request for a barrier pillar variance, if anyone of the above three conditions were satisfied. The Office believes that meaning is contained in the language without the addition of the word "or" and, accordingly, no change has been made in the final rules.

This issuance of a variance under this Part shall in no way reduce the protection afforded the health and safety of workers, nor shall it prevent compliance with the requirement that surface water not be permitted to enter the underground workings unless approved by the regulatory authority. Section 818.15(a) is included to emphasize this requirement, which also appears in Section 816.79.

One comment was received which suggested reducing the 500-foot barrier of coal to a maximum of 200 feet. This suggestion has been rejected. Section 515(b)(12) of the Act specifically states that a 500-foot barrier of coal be maintained between active and abandoned surface and underground mining operations in order to prevent breakthroughs and to protect the health and safety of miners. The regu-

lations do, however, provide for a variance of the 500-foot barrier requirement if the appropriate government agencies find that a lesser distance may be permitted and will satisfy one of the requirements in Section 816.16(a).

PART 819—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS—AUGER MINING

Part 819 sets forth environmental protection performance standards, in addition to the regulations found in Part 816, for the conduct of auger mining operations to prevent adverse environmental effects from augering operations and to ensure maximum recovery of mineral resources. The preamble for proposed Part 819 at 43 Fed. Reg. 41786 (September 18, 1978) is incorporated by reference and sets forth the basis, purpose, and some of the alternatives considered by OSM in drafting this Part.

§ 819.1 Scope.

Section 819.1 states that the Part applies in addition to, and not instead of, Part 816. Editorial changes have been made since the proposed regulations were published in order to clarify this intention.

§ 819.11 Auger mining: Additional performance standards.

Paragraph (a) is intended to ensure reasonable access to coal reserves conceivably recoverable by underground methods when augering fails to leave suitable places to establish entries for underground mining. The surface mining operation and the reclamation must be carried out with consideration for the possibility that the remaining reserves could be mined in the future. If an underground mine is planned and the requirements of Part 818 are met, the regulatory authority may allow for a delay in reclaiming the entry area. This delay, however, does not mean that the site should not be reclaimed.

Several commenters thought that the wording of Section 819.11(a) should be changed by deleting the reference to reclamation. However, Section 515(b)(9) of the Act is clear that the purpose of the special augering provisions is to maximize recoverability of mineral resources that would otherwise remain after reclamation, not as a substitute for reclamation.

Various comments were received regarding how to determine the necessity of leaving undisturbed sections of coal in areas where the remaining reserves may not be susceptible to underground mining. The alternatives which were considered during this final rulemaking were: Permit no variance to the requirement for leaving unmined coal pillars; and provide a variance to permit complete mining of the outcrop area.

To accept the first alternative would facilitate access to coal seams from the area where the highwall was located. However, the Office believes that in some instances, once an area is reclaimed, insufficient reserves might remain to warrant redisturbing the area to extract the remaining coal.

The Office has selected the second alternative because a principal purpose of the Act is to encourage a maximum recovery of the mineral resources. The 250-foot requirement may be waived by the regulatory authority under conditions where coal reserves would be lost with little likelihood of increasing the underground recoverable reserve. Some situations where this might occur are mountaintops or spurs where the remaining reserves are too limited for underground development, or the seam is already underground-mined to its maximum practical extent in the area planned for augering. Additional language has been inserted in the regulations to clarify the circumstances where the unmined coal need not be left because it is not practical to underground mine the reserves.

As proposed on September 18, 1978, Section 819.11(a) contained the language of Section 515(b)(12) of the Act, which provided that the potential for recoverability after "reclamation" has to be maximized. Several commenters thought that this was misleading, since the Act's goal is to maximize recovery during augering (Section 515(b)(1)), as well as after reclamation (Section 515(b)(12)). Accordingly, the language has been revised to refer to surface mining activities, not reclamation.

Section 819.11(b) requires the consent of the regulatory authority, MSHA, and the State mine safety agency for augering closer than 500 feet to an underground mine.

One comment was received suggesting a reduction of the 500-foot distance requirement between auger and underground mining. The argument was made that West Virginia safety laws require that no boreholes are to be drilled in underground mines within 50 feet of surveyed abandoned workings or 200 feet of other known workings which provides adequate protection. Section 515(b)(12) of the Act requires operators to refrain from surface coal mining within 500 feet of active and abandoned underground mines in order to prevent breakthroughs and to protect the health and safety of miners. This Section of the Act and Section 818.15 of the final regulations further allow the regulatory authority to permit an operator to mine closer to an active or abandoned underground mine operation after a finding by the regulatory authority that the requirements of Section 515(b)(12) of the Act will be met. The present language in Section 819.11(b) allows adequate opportunity for the operator to assure the regulatory authority that auger mining closer than 500 feet from abandoned or active underground mines can be conducted safely and efficiently. Accordingly, no change in the regulations was made in response to this comment.

A commenter questioned the logic of the requirement in proposed Section 819.11(c)(1) that auger holes discharging water be plugged or sealed within 72 hours. Changes were made in this Section to shorten and clarify the regulatory language. The Office concurred that a hazardous or adverse environmental condition may be created by the sealing of auger holes emitting toxic- or acid-forming material. The language in this Section has been expanded to provide the regulatory authority, and the operator, with options of how best to handle these specific situations. If the treatment of the discharge water is a more realistic and viable solution, treatment of the discharge water to meet applicable water quality standards may be permitted. The alternative allows more flexibility to the operator and may result in a reduction of the toxic- or acid-forming material introduced into the local water by having the discharge treated immediately, rather than discharging for 72 hours. If a permanent discharge is anticipated, however, the operator must comply with Section 819.11(d).

As proposed, this Section included specific requirements for drainage from unsealed auger holes through the backfill. This provision has been deleted as unduly restrictive. Other Sections of these regulations require stability of backfill and adequate drainage. Deleting the proposed requirements allows the operator and the regulatory authority to develop specific measures for the site.

A few commenters requested that the words "and conservation" be deleted from Paragraph 819.11(e)(2) on the grounds that conservation is contrary to Section 102(k) of the Act. In fact, Section 515(b)(9) of the Act specifically authorizes a prohibition against augering "if necessary to maximize . . . conservation of the solid fuel resources." Accordingly, OSM did not modify this Section in response to these commenters' requests.

Many commenters recommended that auger mining be permitted in previously mined areas without imposing the requirement that the land be returned to approximate original countour. The alternatives considered as a result of these comments included: Re-

quire total reclamation; allow reclamation which does no more than reduce the highwall angle and cover and seal the holes; and allow reclamation which does no more than seal and cover the holes, cover the highwall to the maximum extent possible with the existing spoil, and stabilize the remaining highwall.

At many sites where surface mining operations occurred before the Act was passed, pits containing significant augerable reserves were left. In some of these pits, the disposal of overburden precludes restoration to the original contour. This can occur when the spoil has been spread over a large area rather than piled, or when the spoil has stabilized environmentally and is not a health or safety hazard. In these cases, the environment may be damaged more by the attempts at restoration than leaving the old workings in their stable condition, since additional spoil might have to be hauled from other sites, thus increasing the area of disturbance.

By requiring total reclamation, auger operations conducted in pits that predate the permanent regulations must meet all the requirements of the Act, including elimination of the highwall and restoration of approximate original (premining) contour. Reducing the highwall and covering and sealing holes would not be possible on those sites where insufficient spoil is available for complete covering of the highwall, and would result in reclamation short of approximate original contour. Less reclamation would permit the most auger mining of abandoned pits, but would result in a highwall being left at some sites.

The Act requires both that approximate original contour be restored and that all highwalls be eliminated. What few variances the Act authorizes from approximate original contour are implemented in Parts 824, 826, or other regulations of this Subchapter. Thus OSM believes that the Act requires total reclamation. The regulatory authority must prohibit auger mining in areas previously mined, if insufficient spoil is available to reclaim the affected lands in compliance with the provisions of this Part, Subchapter K and the permanent regulatory program.

Although certain coal reserves will be removed from production, the Office has required total reclamation because the Office has seen no evidence to suggest that these coal reserves are critical at this time. Sufficient reserves are available from other sources so that redisturbing an area which cannot be reclaimed according to the provisions of this Subchapter is not necessary. See OSM's regulatory analysis for a discussion of reserves lost as a result of these rules. The Office also believes that additional spoil may be created if future economics of coal production improve, thereby allowing a higher overburden-to-spoil ratio which would allow reclamation in accordance with requirements to restore approximate original contour. The Office plans to initiate an investigation to review the various physical constraints and operational problems which prevent mining of these presently unminable areas and prevent compliance with the environmental protection standards.

The Office modified the proposed language in Section 819.11(e)(1) to reflect more adequately the wording in the Act in reference to water quality.

PART 820—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS—ANTHRACITE MINES IN PENNSYLVANIA

§ 820.1 Scope.

This Section provides that this Part applies exclusively to those persons seeking to engage in anthracite surface coal mining and reclamation operations in Pennsylvania under a regulatory program for that State, and it implements Section 529 of the Act. Specific performance standards are established by this Part in lieu of the performance standards found in 30 CFR Parts 816–817, and not in addition to them.

§ 820.2 Objectives.

This Section requires that environmental protection standards for anthracite surface coal mining and reclamation operations be adopted through the issuance of special regulations. The legislative history of Section 529 of the Act and the Office's understanding are such that the special provisions apply only to those States having laws which existed as of August 3, 1977.

Pennsylvania was the only State known to have established rules, regulations, and performance standards for anthracite mines in effect on August 3, 1977. The language of Section 820.2 has been modified from the proposed regulations to clarify that the standards being adopted are those that were in effect on the date the Act passed, as required under Section 529 of the Act.

§ 820.11 Performance standards: Anthracite mines in Pennsylvania.

In drafting this Part, several different approaches were considered. The existing structure of the proposed standards lists legislation which directly governs the conduct of anthracite surface coal operations. At least 13 laws and regulations have been enacted in Pennsylvania which govern mining and reclamation practices at anthracite coal mines. These laws and regulations are listed in Section 820.11(a). The citations to these laws have been changed from the proposed version to reflect the correct legal citations. It was proposed by some commenters that these 13 statutes and regulations should be annotated to provide a guide to specific performance standards instead of requiring interested persons to be knowledgeable of all 13 laws. Alternatively, OSM considered promulgating minimum Federal environmental performance standards incorporating the minimum regulations required by Pennsylvania. OSM elected to incorporate by listing the laws and regulations as contained in the proposed draft of this Part. This option was considered the more acceptable approach rather than to develop a complex set of provisions of limited applicability that would lengthen the regulations.

Under Section 820.11(b), the Secretary must issue additional regulations as necessary when the Commonwealth of Pennsylvania amends any law or regulation issued for anthracite mining. If the regulations existing as of August 3, 1977 are made less stringent in any manner, the Secretary must elect to develop specific Federal performance standards to supplement the amended State regulation or, of considered desirable, the Secretary may apply the performance standards for surface mining and underground coal mining of Parts 816 and 817.

The Office added Section 820.11(c) to incorporate by reference the 13 laws and regulations found in 820.11(a) of this Part. This additional language will ensure that the provisions of the Pennsylvania program are enforceable as a matter of Federal law. It also requires that notice of any amendments to the existing laws or regulations or promulgation of additional laws or regulations regarding anthracite surface mining and reclamation operations, which OSM believes should be adopted under the Act, will be published periodically in the FEDERAL REGISTER. The periodic publishing of these changes will provide a mechanism for keeping the general public, operators, and other interested persons aware of such amendments or changes to the laws and regulations listed in Section 820.11(a).

PART 822—SPECIAL PERMANENT PERFORMANCE STANDARDS—OPERATIONS IN ALLUVIAL VALLEY FLOORS

Introduction.

Part 822 establishes environmental protection performance, reclamation and design stanards for surface coal mining and reclamation operations in the arid and semi-arid areas, of the

United States necessary to insure the protection and re-establishment of alluvial valley floors in those areas. Legal authority for Part 822 is Section 102, 201, 501, 503, 504, 506, 507, 508, 509, 510, 515, 516, 517, 519 and 701 of the Act.

This part is organized into four major sections which will apply to all surface coal mining and reclamation operations on which affect alluvial valley floors in the above described areas. Part 822 contains several terms which are specifically defined in Section 701.5 of the regulations. Part 822 establishes operational requirements for mines which must first be permitted under Section 785.19 of Subchapter G.

Applicability to Underground Mining Activities

(A) The Office has carefully considered whether the alluvial valley floor provisions of the regulations, including the definitions, permit requirements, and Part 822, should be applied to underground mining activities.

Upon careful examination of the Act, the Office has concluded that underground mining activities are subject to the alluvial valley floor provisions of the permanent regulatory program.

Sections 510(a) and (b) of the Act apply without qualification to both surface and underground mining activities. Section 510(a) establishes general criteria for review of both surface and underground mining permit applications submitted pursuant to sections 507 and 508 of the Act. Section 510(b)(3) of the Act requires the regulatory authority to find, prior to approval of a permit, that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. Sections 510(b)(5)(A) and (B) of the Act specify the prohibitions on mining on alluvial valley floors where farming occurs. All of these sections of the Act expressly apply to both surface and underground mining activities because of the use of the terminology "surface coal mining operations," which is defined in Section 701 (28) to include "activities conducted on the surface of lands subject to the requirements of Section 516 "of the Act, which expressly covers surface effects of underground coal mining operations. Thus, underground mining activities regulated under Section 516 of the Act are clearly subject to the alluvial valley floor provisions of Section 510 of the Act. Moreover, Section 516(b)(9) of the Act expressly requires the operator to minimize disturbances of the prevailing hydrologic balance at the minesite and in associated offsite areas and to the quantity of water in surface ground water systems both during and after coal mining operations. Underground mining activities can result in adverse disturbances such as subsidence which can cause material damage to surface and ground water systems supporting alluvial valley floors.

As explained in greater detail at 43 Fed. Reg. 41782–41785 (Sept. 18, 1978), subsidence from underground mining can cause both partial or complete dewatering of aquifers and streams which overlay underground mine workings.

Such dewatering would be caused by fractures in the strata underlying the aquifers or stream beds. Gross surface disturbance need not necessarily be a result of the subsidence which might cause such fracturing. Fracturing and its resulting dewatering, however, clearly could "materially damage the quantity of water in surface or underground water systems that supply" alluvial valley floors. In addition, surface operations and facilities and the surface effects of underground mining such as subsidence could "interrupt, discontinue, or preclude farming on alluvial valley floors.

The Act requires the operator to prevent subsidence causing "material damage" to waters on and which supply alluvial valley floors outside the permit area. Further, as required by Sections 510(b)(5)(B) and 516(b)(9) subsidence related to underground mining activities may not materially damage the quantity or quality of water in surface or underground water systems that supply alluvial valley floors where farming exists. See preamble discussion for Section 785.19 incorporated herein by reference.

In addition, Section 516(b)(9) of the Act requires operators to minimize the disturbances to the prevailing hydrologic balance at the minesite and in associated offsite areas and to *the quantity of water in surface ground water systems* both during and after coal mining operations. This protection of surface ground water systems informs the prohibitions in Sections 510(b)(3) and (b)(5) of the Act to materially not damage waters.

In addition to the authority granted by paragraphs (1) and (9) of Section 516(b) to regulate subsidence and hydrology, paragraph (10) provides authority to apply the performance standards contained in Section 515 "to other surface impacts not specified in this subsection". To the extent that the surface impacts of mining include the dewatering of groundwater systems associated with alluvial valley floors, the requirements of Section 515 would apply, including Section 515(b)(10)(F) which requires "preserving throughout the mining and reclamation process the essential hydrologic functions of alluvial valley floors..."

Finally, Section 516(d) of the Act requires the application of "provisions of Title V of the Act...relating to permits...to surface operations and surface impacts incident to an underground coal mine..." The permit requirements of Section 510(b)(5) of the Act are therefore, applicable to underground mining activities.

III. *Technical Literature.*

In promulgating Part 822, OSM relied on the technical literature relating to underground mining as discussed at 43 Fed. Reg. 41782–41785 and in the final preamble for Sections 817.12–817.126, as well as the literature used to develop both the definitions in Section 701.5 which relate to alluvial valley floors and the permit requirements of Section 785.19.

IV. *Editorial corrections.*

Several changes were made to part 822 to insure internal consistency within the Part and with other provisions of the Office's final rules.

Section 822.11(a) has been rephrased to clarify that it requires continued protection of alluvial valley floors outside the affected area.

Section 822.11(b) has been rephrased to clarify that it requires reestablishment of alluvial valley floors within the affected area, i.e., alluvial valley floors that are to be mined or which have a hydrologic connection with areas that are to be mined.

Section 822.11(c) has been removed because its requirements are now included in the other paragraphs of the Section.

Section 822.11(d) has been renumbered as Section 822.11(c) and remains unchanged.

Section 822.14(a) has been revised to clarify the different monitoring requirements that must be satisfied in order to preserve the essential hydrologic functions of alleuvial valley floors in unaffected areas, as distinguished from reestablishing essential hydrologic functions of alluvial valley floors in affected areas. In the latter case, the functions can be disturbed but must be reestablished. These revisions have resulted in deletion of Paragraph (b), because its requirements are now contained in paragraph (a).

In Section 822.11(a) (formerly 822.11(a) and (b)) and in Sections 822.14 (a) and (b), the term "permittee" has been substituted for "person," but no substantive change is intended.

V. *Cost associated with spoil handling techniques.*

Several commenters alleged that the alluvial valley floor regulations would increase the cost of producing coal due to a 10 to 50 percent increase in spoil handling costs. These cost estimates were derived from a research project

sponsored by the Bureau of Mines and conducted by the Montana Agricultural Experiment Station at Montana State University (Dollhopf, D. J. and others, 1977. Selective Placement of Coal Strip Mine Overburden in Montana). This project assessed the occurrence of potentially toxic overburden in mined areas adjacent to the East Fork of Armels Creek in southeastern Montana and was done outside the area mapped as a subirrigated alluvial valley floor during a reconnaissance survey conducted by Hardaway and others (1977). The higher estimated costs resulted from placing a clay cap over selectively placed toxic overburden, while the lower estimated cost was associated with selective placement only

The Office has decided not to modify the regulations after careful consideration of these comments. First, the report by Dollhopf and others is applicable only to those alluvial valley floors where selective placement of overburden of varying chemical quality would be required to reestablish the essential hydrologic functions. The costs identified by the commenters are thus not applicable to reclamation of all alluvial valley floors and cannot be used without qualification as to their applicability. Because aquifer permeability of sandstone and siltstones is recreated automatically in any dragline operation, the special handling techniques assumed by the report are, in fact, not necessary in all cases to recreate coal aquifers in reestablishing alluvial valley floors (see Dollhopf, 1977, p. 49). Second, Dollhopf assumed that selective handling of overburden would be required upon reaching the salinity guideline concentrations established by the State of Montana as "suspect levels" for excessive heavy metals concentrations. The report goes on to qualify its findings as follows:

"The presence of inimical materials ... does not necessarily infer that these materials be specifically handled. It is expected that, in most cases, sufficient dilution of heavy metals will occur during the normal course of coal extraction and spoil placement."

Thus, the commenter is incorrect in claiming that the alluvial valley floor regulations will cause a 10 to 50 percent cost increase in spoils handling in all cases. However, if the overburden in a mine area is toxic, the costs of selective placement, as in the Dollhopf report, may accurately reflect those measures required to comply with Sections 515(b)(3), 515(b)(10) and 515(b)(19) of the Act. More specifically, Section 515(b)(3) requires that toxic materials be covered. Section 515(b)(10) requires avoidance of toxic mine drainage and Section 515(b)(19) requires revegetation, all of which potentially involve selective placement of toxic spoils or require planning to achieve dilution with non-toxic materials. But if the overburden in a mine area is toxic, then the above-cited provisions of the Act are unavoidable requirements regardless whether there is an alluvial valley floor within the permit area.

Section 822.11 applies the requirements of Sections 510(b)(5) and 515(b)(10)(F) of the Act to preserve the essential hydrologic functions of alluvial valley floors to both (1) those alluvial valley floors that are not supposed to be disturbed and which are therefore "not within an affected area" and (2) those alluvial valley floors which are within an affected area, including the surface coal mining and reclamation operation itself.

Paragraph 822.11(a) requires operations to be conducted in a manner that preserves throughout mining the essential hydrologic functions of non-affected alluvial valley floors. Alluvial valley floors that are not thoroughly studied pursuant to Sections 785.19(c)–(d), because they are found to be hydrologically isolated from the operations, must not be affected in a manner that violates either Sections 510(b)(5) or 515(b)(10)(F) of the Act.

Paragraph 822.11(b) requires operations to be conducted to reestablish essential hydrologic functions of alluvial valley floors within an affected area. It is applicable to those alluvial valley floors which meet the test of Section 510(b)(5)(A), as implemented through Section 785.19(c), and can be mined or affected only as long as there is compliance with Section 515(b)(10)(F) of the Act and all other applicable performance standards. These alluvial valley floors must be studied in sufficient detail pursuant to Section 785.19 (c) and (d) to identify their essential hydrologic functions.

A comment noted that, since operations which are subject to Section 822.11(c) as proposed are typically operations which disturb or affect an alluvial valley floor, it would be appropriate to add the verb "reestablish" to that paragraph, as preservation of the alluvial valley floor throughout mining operations is not a requirement under those circumstances. The Office agrees and has modified the section accordingly, by applying Paragraph (a) to unaffected alluvial valley floors and Paragraph (b) to affected alluvial valley floors. Thus, Paragraph (a) requires protection of alluvial valley floors that are not mined and which are not to be affected under the permit, while Paragraph (b) addresses affected alluvial valley floors where essential hydrologic functions must be reestablished.

For clarity, Paragraph (c) describes the characteristics supporting the essential hydrologic functions of alluvial valley floors. These characteristics must be evaluated to identify such functions and must be monitored to determine compliance with the Act.

Section 822.12 principally implements the requirements of Sections 510(b)(3) and (5) of the Act, which forbid interruption, discontinuance or preclusion of farming and causing material damage to alluvial valley floors, subject to provisions of Section 510(b)(5). The Office believes that these Sections of the Act provide authority to require cessation of operations that are adversely affecting the alluvial valley floors; this provision is necessary in order to make clear the duty of the regulatory authority and the permittee under such circumstances. See also Sections 517, 518, 521, of the Act. Language in the Section has been clarified to indicate that the regulatory authority must approve remedial measures prior to resumption of mining.

A commenter requested that Section 822.12(b) be limited to effects outside the permit area. The Office did not accept this suggestion because it could allow interruption, discontinuance or preclusion of farming on an alluvial valley floor, and the commenter offered no evidence that the Act was intended to allow such effects on farming.

One commenter wished to exclude temporary dewatering from the meaning of material damage as used in this Section. Another recommended that "material" or "materially damage" be defined as in Section 785.19, so that it would apply only to dewatering which would reduce the post-mining amount of irrigable land, as compared to pre-mining conditions. OSM has accomplished this result by moving the definition of "material damage" from Section 785.1 to Section 701.5, making it applicable to Section 822.12. Temporary dewatering may thus be allowed, if it does not preclude, interrupt or discontinue farming on an alluvial valley floor which is significant to farming. The phrase "materially damage the quantity or quality of water" is defined in Section 701.5, but examples of conditions which the definition is intended to include are provided in Section 785.19(e)(3).

A few commenters addressed the desirability of allowing temporary dewatering or beneficial lowering of the water table in an alluvial valley floor after mining. These comments have been taken into account by the previously described shift of the definition of "material damage" from Section 785.19 to Section 701.5, so that the term applies only to significant and adverse changes, rather than all changes. Thus, beneficial dewatering that does not adversely affect an allu-

vial valley floor might be allowed, but temporary dewatering is allowed only for alluvial valley floors located in affected areas and only when the essential hydrologic functions can be reestablished.

In connection with Section 822.13, a commenter suggested changing the term "agricultural activities" to "farming." This change was not accepted because Section 515(b)(10)(F) of the Act applies to all alluvial valley floors, not just those with farming; and the performance standards of Part 822 must likewise apply to all alluvial valley floors.

In connection with Section 822.14(a), another commenter proposed to replace the term "agricultural utility" in Section 822.14(a) and the term "agricultural use" in Section 822.14(d) with the term "farming." This change was not accepted because monitoring requirements of Part 822 apply to alluvial valley floors which are defined in the Act to include "subirrigation or flood irrigation agricultural activities."

Section 822.14 (a) and (b) has been reworded to avoid conflict with Section 510(b)(5)(A) of the Act. In particular, Sections 822.14 (a) and (b) have been revised to distinguish between the objectives of monitoring when alluvial valley floors are within an affected area and when they are not. Both the current agricultural use that is relying on the essential hydrologic function, as well as any potential agricultural uses, need to be protected either by not disturbing the essential hydrologic functions if the alluvial valley floor is outside the affected areas, or by reestablishing the important characteristics that support the essential hydrologic functions of the alluvial valley floors if these floors are within the affected area.

Some commenters noted that proposed Sections 822.13 and 822.14(a) appeared to require the operator to maintain existing and future agricultural uses and productivity after mining and reclamation. In response to the comments, the phrase "and maintained after mining" in Section 822.13 was deleted. It was not the Office's intent in the proposed regulations to require long-term maintenance, but rather that agricultural uses be reestablished in a permanent manner that will continue after bond release. In Section 822.14(a), the word "maintained" was deleted for the same reasons.

Section 822.14 has been reorganized to distinguish between alluvial valley floors within and without the affected area, because this distinction parallels the combined requirements of Section 510(b)(5)(a) and 515(b)(10)(f) of the Act. This revision allows disturbance of alluvial valley floors that have been identified as "affected" due to their location within the affected area; but it prohibits disturbance of alluvial valley floors that are either significant to farming, and thus cannot be mined, or located outside the affected area, and thus should not be affected by mining.

Commenters also recommended wording changes in two sections. These commenters argued for substituting "reestablishment of hydrologic characteristics," in place of "reestablishing agricultural utility" in Section 822.13, and "land capability," in place of "agricultural utility" in Section 822.14. The changes would not, however, adequately account for the agricultural aspects of alluvial valley floors, as required by Section 701(1) of the Act. Therefore, they were not adopted.

Several commenters noted that the proposed monitoring program of Section 822.14(c) appeared to require monitoring of alluvial valley floor characteristics that should have been identified prior to mining. The Office notes that this paragraph was designed to ensure that monitoring further describe important characteristics of alluvial valley floors, or to identify ones that may have been missed in the permit application review phase.

Monitoring required under Section 822.14(c) may not differ from the normal hydrologic monitoring required at most sites, but should be designed to check periodically that the essential hydrologic functions identified prior to mining are, in fact, those that should be reestablished. In a complex system such as an alluvial valley floor, it is possible that some important characteristics may be poorly described during pre-operations investigations. The monitoring system is to be designed to observe any major differences between those identified in the mine plan and actual onsite conditions.

A commenter asked that monitoring data be made routinely available to the public through the regulatory authority (paragraph 822.14(d)). This comment was accepted, pursuant to Sections 102(i) and 517(f) of the Act.

A commenter requested that clarifications be made to requirements for operations that were excluded from the permit approval/denial criteria by the proviso to Section 510(b)(5) of the Act. In part, this comment also related to Section 506(d)(2) of the Act, since the proviso of that subparagraph excludes from compliance with Section 510(b)(5)(A) and (B) areas covered by permit renewal applications for lands which were previously identified in a reclamation plan approved by a state in the year preceding August 3, 1977.

The proposed rules on alluvial valley floors did not include this particular exclusion. However, the proviso was addressed in the preamble to the regulations (43 Fed. Reg. 41788, September 18, 1978). Proposed Sections 785.19 and 786.17 did not distinguish between existing and new mines, except in the case of applying Section 510(b)(5)(A), as in proposed paragraph 786.17(b). The exclusion for pre-Act mines in Section 510(b)(5) is discussed in the context of Section 785.19(e)(1).

In response to the commenter, the Office added clarifying language to Section 785.19(e)(1)(i) only, since the remaining provisions of Section 785.19 apply to all current mining operations. They apply because those provisions implement Sections 510(b)(3) and 515(b)(10)(F) of the Act. Language was also added to Section 785.19(e)(1)(i), to indicate that, if a valid State permit was issued in the year preceding August 3, 1977, and that permit was based on a reclamation plan that specifically addressed the lands for which a new or renewed permit is now sought under Section 510(b) or 506(d), then compliance with Section 785.19(e)(1)(i) is not required. The same language was also added to subparagraph 822.12(d), to ensure that the provisions of Section 510(b)(5)(A) of the performance standards are correctly applied.

Two commenters urged the Office to recognize that some alluvial valley floors could be reclaimed. One suggested that reclamation procedures could improve certain alluvial valley floors. The Office recognizes that alluvial valley floors passing the tests of Section 510(b)(5)(A) of the Act can be reclaimed. Thus, it has implemented Section 515(b)(10)(F) of the Act in the form of Part 822, to provide environmental protection performance standards for operations in, as well as adjacent to or under alluvial valley floors. The Office, however, has no evidence of improvements occurring to natural alluvial valley floors as a result of coal mining. The Office is of the opinion that flood-irrigated alluvial valley floors could be widened, if soils were available. Whether the valley becomes a wider alluvial valley floor would depend on the availability of water and suitable soils.

The Office saw no need to change the regulations in this regard and was, in fact, not requested to do so by the commenters.

PART 823—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS FOR OPERATIONS ON PRIME FARMLAND

Part 823 contains regulations for achieving the soil-reconstruction requirements of Section 515(b)(7) of the Act and the revegetation provisions of Sections 510(d)(1) and 515(b)(20), which require equivalent or higher levels of yield for long-term intensive agricultural post-mining land use. This

Part requires that persons conducting surface coal mining activities on prime farmland, as defined in Section 701.5, must return such land to a level of yield equivalent to or higher than its premining yield. It sets forth the procedures for the systematic removal of soil horizons, stockpiling, site preparation prior to restoration, systematic replacement of soil horizons, and revegetation of the disturbed areas. Authority for this Part is found in Sections 102, 210, 501, 503, 504, 506, 507, 508, 510, 515, 516 and 517 of the Act. Further discussion of the authority, basis, and purpose for this Part is contained in the preamble to the proposed regulations (43 FR 41788-41789, September 18, 1978).

Technical literature used in developing these regulations included:

Bear, F. E. 1953. Soils and fertilizers. 4th edition. John Wiley and Sons, New York. 420 pp.

Browning, G. M. 1974. Seasonal distribution of soil moisture under different crops. Soil Science Society of America. Proceedings, 1946. Vol. 11, sec. VI, pp. 571-521.

Chapman, A. G. 1967. How strip-land grading affects tree survival and growth. Southern Illinois University School of Agriculture, Publication 29. 34 pp.

Grandt, A. F. 1978. Mined-land reclamation in the interior coal province. Journal of Soil and Water Conservation. Vol. 33, No. 2, pp. 62-68.

Jones, R. G. 1977. Soil Survey of Palo Alto County, Iowa. U.S. Soil Conservation Service. 100 pp. and 84 maps.

McCormack, D. E. 1974. Soil reconstruction: For the best soil after mining. Second research and applied technology symposium on mined-land reclamation, at Coal and the Environment Technical Conference, October 22-24, 1974, Louisville, Ky., National Coal Association, Washington, D.C., pp. 150-162.

McCormack, D. E. 1976. Soil reconstruction: Selecting materials for placement in mine reclamation. Mining Congress Journal. Vol. 62, No. 9, pp. 32-36. (Reprint.)

Plass, W. T. 1978. Reclamation of coal-mined land in Appalachia. Journal of Soil and Water Conservation. Vol. 33, No. 2, pp. 56-61.

USDA. 1955. The yearbook of agriculture, 1955. U.S. Government Printing Office, Washington, D.C. 751 pp.

U.S. Soil Conservation Service. 1951. Soil survey manual. U.S. Department of Agriculture, Agriculture Handbook No. 18. 503 pp.

Wadleigh, C. H. 1955. Soil moisture in relation to plant growth. Yearbook of agriculture, water. U.S. Department of Agriculture, pp. 358-361.

§§ 823.1 and 823.2.

Several comments were received on Sections 823.1 and 823.2, the introductory Sections of this Part. A commenter suggested amplification of the statement of scope in Section 823.1, to indicate that the requirements of Part 823 are in addition to all other performace standard requirements in Parts 816 and 817. This change has not been made in Section 823.1 but has been adopted in Section 810.11.

Another commenter requested that the term "productivity" in Section 823.2 be changed to "productive capacity" in order to clarify that Part 823 covers not only soil-handling and reconstruction standards, but also standards for the success of revegetation on prime farmlands. OSM agrees that this phrase better explains the scope of Part 823, and the final regulation has been revised accordingly.

§ 823.11 Prime farmland: Special requirements.

Section 823.11 establishes special requirements for soil handling and proof of revegetation success. Paragraph (b) requires that soil horizons be removed before any drilling, blasting, or mining and that these materials be protected from wind and water erosion. Paragraph (c) requires that revegetation success on prime farmland be determined by comparing actual crop production on the reclaimed mine area to a target level of crop production specified in the permit. The specified level will be set by the regulatory authority in consultation with the Secretary of Agriculture, as required in paragraph 785.17(b)(8). This target level will reflect the per-acre production which would reasonably be expected for the crop(s) specified in the approved reclamation plan. This level will be based upon the weighted average production of the crop(s) on each prime farmland soil present in the permit area. Some changes have been made in Section 823.11 to reflect more specific comments on Sections 823.12, 823.13, and 823.14, as discussed in the following paragraphs.

§ 823.12 Prime farmland: Soil removal; and.

§ 823.14 Prime farmland: Soil replacement.

Sections 823.12 and 823.14 deal with the removal and replacement of the various soil horizons in accordance with Section 515(b)(7) of the Act. Because prime farmland soils are defined by the Department of Agriculture as those soils having the best combination of certain physical and chemical properties for plant growth, there will be a few circumstances where it will be more desirable to substitute selected overmerge burden material for A and B horizons in soil reconstruction. Where substitute material can be shown to be equal to or more favorable than the A and B horizons for plant growth, its use may result in less costly soil recontruction and possibly a more productive soil. Nevertheless, OSM believes that removal and replacement of the A and B horizons in their original sequence offer the highest potential for creation of a final root zone of depth and quality comparable to that which existed in the natural soil.

Several commenters suggested various changes in Section 823.12(a) to allow mixing or consolidation of soil horizons where it could be shown that mixing would therefore, be beneficial to the soils or would result in equivalent or higher yields. Because stockpiling of other suitable soil materials is provided in Section 823.13, OSM has not made any change here in response to these commenters' suggestions.

Sections 823.12(b) and 823.14(a) of the proposed regulations required that the minimum depth of soil reconstruction be 48 inches, or a lesser depth if root-inhibiting layers are present. Numerous comments dealt with the 48-inch depth of reconstruction. Many commenters opposed the 48-inch depth on the grounds that some prime farmland soils are less than 48 inches deep and that operators should not be responsible for reconstructing such soil below the natural premining depth. Other comments supported the 48-inch depth unless the regulatory authority approves a greater depth.

OSM agrees that there would be no beneficial effect from reconstruction of bedrock or other layers in the upper 48 inches that would inhibit roots and have little or no beneficial effect on soil productivity. For the reasons stated below, OSM has revised the final regulations as follows: (a) The requirement that soils be reconstructed to a depth of 48 inches is retained, except for a lesser depth in those soils that contain root-inhibiting layers; and (b) this requirement is now located in new Sections 823.12(b) and 823.14(a) which have been revised to cover the required depth of soil reconstruction.

Several properties of certain soil horizons inhibit root penetration (U.S. Soil Conservation Service, 1951, p. 249). Such horizons are easily identifed by field examination, and depth of root penetration is readily observed. Where the depth to such horizons is less than 48 inches, OSM considers the lesser depth to be the depth of the root zone for the purpose of the final regulations. In soils without root-inhibiting soil horizons, the depth of rooting is less apparent.

To carry on their principal functions effectively, roots require soil horizons

that are able to supply adequate water, air and nutrients (U.S. Soil Conservation Service, 1951, p. 249). The amount of plant-available water held by soils is determined largely by the size distribution of soil particles and their structural arrangement (Bear, 1953, p. 93). Loam, silt loam, or clay loam soils may hold 2 inches or more of available water per foot of soil depth, whereas sand or other coarse-textured materials hold less than 1 inch (U.S. Department of Argriculture, 1955, p. 120). The roots of oats, wheat, barley, and corn penetrate to depths greater than 6 feet (Bear, 1953, p. 192). Alfalfa has been shown to remove all of the available water from soil between a depth of 3 to 8 feet in Marshall silt loam (Browning, 1947, pp. 517-521). Corn plants use 10 to 16 inches of water per year (Wadleigh, 1955, pp. 385-361), and remove water to depths of 5 feet or more (U.S. Soil Conservation Service, 1951, p. 250). A comparison of yields for similar prime farmland soils in Palo Alto County, Iowa (Jones, 1977, p. 67) shows yield reductions of 12 percent for corn, 25 percent for soybeans, and 17 percent for alfalfa-brome hay, where available water capacity in the 37-to-60 inch layer is only 0.7 of an inch compared to 3.8 inches in the same zone of the higher yielding soils.

Under these conditions, it is apparent that the water-capacity of the 37- to 60-inch zone contributes to crop yields. Under favorable conditions, some plant roots penetrate to much greater depths than is commonly believed (U.S. Soil Conservation Service, 1951, p. 250). Soil reconstruction only to the depth of root penetration of a shallow-rooted crop, such as onion, would, therefore, be inadequate to restore the productive capacity for a deep-rooted crop such as corn.

Although there is limited information on the minimum soil depth required to restore the productive capacity of prime farmland after mining, OSM believes that there is sufficient evidence, on the basis of the foregoing data and the works of McCormack (1976, p. 32-36) and Plass (1978, pp. 56-61), to establish a minimum depth of 48 inches for reconstruction of prime farmland soils where there is no root-inhibiting layer. The 48-inch depth should be a minimum to restore an adequate root zone, provide adequate water-holding capacity, and restore soil productive capacity. Where there are root-inhibiting layers, however, reconstruction to a lesser depth will be allowed. This provision of the final regulation should also resolve the concerns of several commenters about fragipans and/or toxic layers that restrict root development; the fragipan and/or toxic layers will not have to be disturbed or mixed into the soil of the root zone when these materials will inhibit root development or hinder vegetative growth.

A commenter pointed out that soil removal and replacement should take place only when normal farming practices would permit tillage of the soil. OSM has rejected that comment because this requirement would be very difficult to enforce. Also, the soil-moisture content that permits tillage without damaging soil structure is not well defined and would vary between soils; some soils have a more narrow moisture range (that would permit tillage) than others, and some soils dry more quickly than others. Section 785.17(b)(3) of the final regulations requires that prime famland soils be reconstructed to a bulk density comparable to the premined soil. Operators will find that, to meet the bulk-density requirement, the soil will have to be moved only under optimum moisture content and with proper equipment. Thus, OSM believes that the final regulations will satisfy this commenter's concerns.

Another commenter felt that the regulatory authority should specify the thickness of A horizon to be removed and replaced under Sections 823.12(b) and 823.14. This recommended change would allow the regulatory authority to authorize, for example, replacement of less topsoil (A horizon) than occurred in the natural soil where reconstructed productivity will not be affected. The commenter suggested that the topsoil not replaced could be placed on non-prime farmland areas where the original topsoil was thin or absent. Section 785.17(b)(5) of the final regulations provides for regulatory authority approval of the use of substitute soil material when adequately documented by the applicant. Thus, the burden of proof of soil quality after reconstruction is on the applicant. OSM has decided not to change this requirement because Section 823.14(a) already provides for minimum and maximum restoration depths and Section 785.17(b)(5) also provides for the use of other suitable materials when the operator can show, through documentation, that other materials can be used to achieve the desired level of production.

Several commenters pointed out that the need for scarification, as required in Section 823.14(b), depends upon site-specific factors such as soil, compaction, climate, and topography. They argued that requiring scarification in all situations ignores the fact that, under certain site-specific conditions, the procedure could result in adverse conditions for equipment operation and could produce accelerated erosion or excessive compaction. Moreover, they claimed that prime farmland is relatively level so that elimination of potential slippage is not a problem, and that certain overburden types probably would not be compacted sufficiently to warrant the practice. OSM agrees with these comments and has altered Section 823.14(b) accordingly.

In connection with Sections 823.14(c) and (d) of the proposed regulations, several commenters raised questions regarding permeability as an adequate measure of soil reconstruction and use of the phrase excessive compaction; they suggested that bulk density be used as a standard for measuring compaction. Commenters also pointed out that permeability is difficult to measure and requires considerable replication to establish a norm for a single soil. By contrast, bulk density, as a direct measurement related to compaction, is easier to measure than permeability for determining the adequacy of soil reconstruction. OSM has considered these comments and agrees that bulk density is a more suitable standard. Therefore, Sections 823.14(c) and (d) have been revised and relettered to establish standards for the moist bulk density of reconstructed soils and to specify the thickness of replaced soils. Section 823.14(e) is the revised version of Section 823.14(d) of the proposed regulations, and Section 823.14(f) is the relettered version of Section 823.14(e) of the proposed regulations but is otherwise unchanged.

The final regulations apply these standards to the entire soil to be reconstructed, rather than just the upper 20 inches, as set forth in Section 823.14(d) of the proposed regulations. OSM has made this change because compressed soils below this depth (20 inches) are out of reach of the chief structure-forming processes, such as wetting, drying, freezing, thawing, organic residues, and soil flora and fauna populations; and because few plants can grow in such compact soils (Chapman, 1967, pp. 17-22).

In deciding to substitute bulk density for permeability as a measure of compaction, OSM has also considered the following factors. Bulk density data are used to compute available water capacity, total pore space, and other soil properties. The moist bulk density of soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by the texture, kind of clay, content of organic matter, and structure of the soil. A great deal of bulk-density data have been collected by the National Cooperative Soil Survey. These data have been analyzed, and bulk-density values have been established for many soil series. Where established, these values

are recorded on the soil-survey interpretation record for the soil series and are available from the Soil Conservation Service. Use of these bulk density data, in lieu of sample data from the permit area, may be approved by the regulatory authority, as provided in Section 785.17(b)(3).

Some commenters asked what references supported the concept that all soils have a permeability quotient of 0.06 inches per hour. Others suggested that the 0.06-inch requirement of the proposed regulations may result in more compact soils and suggested that premining and postmining checks of permeability be made. Also, some stated that excessive compaction varies with the specific crop. OSM has adopted moist bulk density as a measure of compaction because increasing bulk density will reduce soil productivity by inhibiting root penetration, reducing air space, and influencing soil permeability. Thus, the final regulations provide that, to assure postmining productivity of the reconstructed prime farmland soils, only 10 percent of the reclaimed area can have a moist bulk density greater than 0.1 gram per centimeter more than the values stated in the approved permit.

§ 823.13 Prime farmland: Soil stockpiling.

Section 823.13 is designed to ensure that steps are taken to avoid the mixing of soil horizons when stockpiled. Such mixing is best prevented by total and complete separation of soil horizons. The area for stockpiling needs to be selected carefully to assure that it is not in a drainageway where water containing acids and other toxic materials may cause contamination of the soils.

Several commenters pointed out that other suitable soil materials may be used for prime farmland reconstruction in addition to the A, B, or C horizons, if approved by the regulatory authority, and that the regulations should permit stockpiling of different horizons with other material. OSM agrees that other suitable material can be used, and this phrase has been added to Section 823.13. Once such other materials have been approved by the regulatory authority, they may be stockpiled with the corresponding soil horizon. This provision is also discussed in the preamble to Section 785.17(b)(5).

Commenters also expressed concern about damage to micro-organisms, organic content, and fertility from stockpiling topsoil (A horizon) for long periods of time (20 to 30 years). OSM agrees that some damage will occur but believes that this damage is not irreversible and that any such losses can be restored or replenished once the soil layers are reconstructed (McCormack, 1974, p. 151).

A commenter pointed out that the regulatory authority does not have the power to grant or deny permission to stockpile soil that cannot immediately be replaced, as the proposed wording of Section 823.13 implied. OSM agrees with this concern and has adopted new wording to delete the need for approval by the regulatory authority. According to several commenters, soil materials may be removed, stock-piled, and replaced without separating the A, B, or C horizons when a qualified soil scientist certifies that the combined materials will have equal or better productivity. The final regulations have been amended to clarify this point. These materials may be stockpiled together if approved by the regulatory authority, as provided in Section 785.17(b)(5).

§ 823.15 Prime farmland: Revegetation.

Section 823.15 is a new Section which has been added to consolidate and clarify the proposed revegetation standards for prime farmland. These standards are intended to (1) ensure that the level of productivity of prime farmland will be restored to a condition capable of supporting the uses that the land was capable of supporting before mining, and (2) demonstrate that the yield from the prime farmland has, in fact, been restored to pre-mining levels.

The revegetation standards for prime farmland were located in various places in the proposed rules. Section 816.111(a) stated that for prime farmland the reclamation requirements of Part 823 shall apply. Section 785.17(e)(5) required that cropping and restoration of adequate soil moisture be achieved during the period from completion of final regarding until release of the performance bond. The criteria and schedule for the release of the performance bond for prime farmland, set forth in Sections 807.12(a) and 807.13(b)(2), included requirements that (1) the permittee has met the performance standards of Part 823, and (2) no portion of the bond may be released until equivalent or higher levels of yield are achieved. Section 785.17(e)(6) required that data be presented in the permit application which demonstrate that the proposed method of reclamation achieves, within a reasable time, equivalent or higher levels of yield than existed before mining. All of these requirements have been combined to make up the new Section 823.15 of the final regulations.

Under Section 823.15, the operator need not place the land immediately into cropland but must, as a minimum, fulfill the requirements of the Section during the period that the land is held out of crop production. According to Grandt (1978, p. 65), approximately 5 years' growth of deep-rooted legumes, such as alfalfa and grasses, on sites where the topsoil has been replaced should help restore the soil quality for cropland uses. Nevertheless, because Section 515(b)(16) of the Act requires that reclamation proceed as contemporaneously as possible, delay in the reclamation of disturbed lands is to be avoided. To ensure minimum delay in restoring the productive capacity of prime farmland, a 10-year limit has been placed on the time which can elapse between soil replacement and the initiation of the performance test for revegetation success.

Crop-production fluctuation in response to natural variations in temperature, moisture availability, precipitation, and other factors can vary considerably within a relatively small area as a result of these factors. To allow for these fluctuations, Section 823.15(c) requires an operator to demonstrate with three successive crop plantings that the average yields are equal to, or greater than, the predetermined target yields. Compensation for weather abnormalities is based upon the concept that, if the weather depresses the crop yields for the entire crop-growing area, the operator should be able to adjust the yields accordingly. In years where the average crop yield is elevated or depressed, the operator should be able to adjust the yield data for that growing season accordingly. OSM suggests that, if the average crop growth area yield is reduced by 12 percent, the operator should be permitted by the regulatory authority to adjust the yield data accordingly when the data are offered in support of the claims for bond release.

Several commenters were concerned with various aspects of the revegetation criteria. One commenter stated that it was nearly impossible to restore prime farmland to its highest capability on a short-term basis, while other commenters suggested that a reasonable time should extend to 5 or 10 years. Another commenter wrote an entire new revegetation section and proposed that it be adopted in the final regulations. In general, these commenters were concerned with the revegetation standards for prime farmland including the time period needed to establish equal or higher levels of yield. OSM believes that the provisions of Section 823.15 will satisfy the concerns of the conmenters because it will be possible for operators to use soil-building crops such as deep-rooted, nitrogen-fixing legumes and grasses (which can include small grains and sorghums) that can be tilled into the soil to increase organic matter when necessary. These soil-building practices can be used immediately following soil replacement and

before initiation of the performance test for revegetation success.

PART 824—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS—MOUNTAINTOP REMOVAL

Part 824 provides the conditions with which persons engaged in the surface mining methods known as mountaintop removal must comply when surface coal mining and reclamation operations are exempted from the requirement to restore the affected areas to their approximate original contour. This Part is designed to implement Section 515(c) of the Act and would apply to persons who wish to conduct mining under regulatory programs involving deviations from the approximate original contour requirements of Section 515(b)(3) of the Act, Subchapter K, and the applicable regulatory program. This Part must be read together with Section 785.14 which contains the permit requirements that must be met before mountaintop removal mining can be approved.

A commenter requested that the regulations either ban mountaintop removal or make it economically more difficult. This commenter indicated that permanent destruction of the mountains only benefited the rich, and not the people of more modest means in the area where mining will occur. OSM has not modified the proposed mountaintop removal rules in response to this comment. Congress considered the issue of mountaintop removal and determined that it should be permitted, provided the conditions of Section 515(c) of the Act are met. OSM feels that the adoption of this commenter's request would be contrary to the Congressional mandate, which balanced environmental protection, land use needs and national energy goals in enacting the mountaintop removal provisions of the Act. Of course, if State or local land use plans call for the retention of mountaintop contours, a regulatory authority may designate an area unsuitable for mountaintop removal mining in accordance with the provisions of Subchapter F.

§§ 824.1 and 824.2 Scope and Objectives.

Sections 824.1 and 824.2 set forth the scope and objectives of this Part. These Sections have not been substantively changed from the version proposed September 18, 1978. The words "and this Chapter" have been added to the end of Section 824.2(c) to emphasize the role of this Part in the regulatory scheme implemented under the permanent regulatory program.

It was considered appropriate under Section 515(c)(2) of the Act to permit the mining of ridges under the mountaintop removal variances, in order to promote the maximum utilization and conservation of the solid fuel resource being recovered as stipulated by Sections 102(f) and 515(b)(1) of the Act. Mining must, however, recover all coal resources in ridges to assure maximum recovery up to the economic limits available to the operator, thus assuring the area will not be disturbed again.

The intent of OSM is, however, that the ridge must cover a sizable area in comparison to the total mountaintop. For example, if a ridge extended for a distance of one or more miles away from the mountaintop, it would be acceptable as a mountaintop removal site, even if the coal seam continued into a mountain at one end of the ridge and the portion of the seam in the mountain is not removed. However, the ridge would have to be underlain by a large block of coal and the variation from the requirement to return to approximate original contour could be approved only if the entire seam in the ridge is removed, to insure maximum recovery of the resource. On the other hand, if the proposed operation covered a small parcel of land (e.g. a spur), the permit for a mountaintop removal variance would have to be denied.

Precise definition of acceptable versus unacceptable mountaintop removal configurations is difficult to establish on a general basis. OSM believes that the regulatory authortiy should determine the merits of each mountaintop removal request on a case-by-case basis. OSM intends, however, that the final cut shall be backfilled and graded in accordance with the environmental protection standards set forth in 30 CFR Part 816.

OSM considered restricting mountaintop removal to situations where the coal seam was daylighted on all sides and completely removed from all ridges and mountains through which it ran without a break. This alternative was rejected as an overly narrow reading of the phrase "entire coal seam" in Section 515(c) of the Act. The alternative selected will facilitate more coal recovery than this more restrictive alternative.

Another comment was received which suggested expansion of Section 824.2. The comment suggested expansion of the Section's objectives to encourage mining practices which will result in an improved postmining land uses. This suggestion has been rejected because the intent of the objectives provision is to present an abbreviated overview of the purpose of each section or Part of the regulations. The insertion of the additional language which was suggested would be redundant. Potential postmining land uses are adequately covered in other sections of the part.

Other comments were received which suggested the banning of mountaintop removal operations in certain parts of Appalachia. These suggestions have not been accepted because OSM feels that they are contrary to the intent of the Act. The Office believes that the regulatory authority should have the discretion of determining when variances to the approximate original contour should be provided. Of course, under Section 522 of the Act and Subchapter F, a regulatory authority might elect to prohibit mountain top removals in a particular area.

§ 824.11 Mountaintop removal: Performance standards.

Most of the provisions of Section 824.11, the applicable performance standards, come directly from the Act and are substantially as proposed September 18, 1978. Those provisions are discussed in the preamble to the proposed version of this Part at 43 FR 41789 (September 18, 1978).

A comment was received which requested that Section 824.11(a)(2) be changed to allow mountaintop removal mining to recover only a portion or part of the coal seam under the mountaintop which may constitute the limit of maximum economic recovery. A similiar alternative for mountaintop removal mining was considered during the drafting of the proposed permanent regulations. See 43 FR 41789 (September 18, 1978). At that time, the alternatives considered included not permitting mining of such areas where the entire coal seam could not be removed and permitting mining of spurs and attached ridge areas under variances to mountaintop removal regulations provided that the final cut is promptly backfilled and the highwall eliminated. Except to the extent that the latter is allowed as discussed above, OSM believes such variances are beyond the authority of Section 515(c) of the Act.

A comment requested denial of variance from approximate original contour requirements at mountaintop removal operations if the postmining land use was proposed to be forestry or silviculture. The alternatives which were considered by OSM included: Require reclamation of land to approximate original contour in compliance with the environmental performances standards of this Subchapter; and Permit a variance to the approximate original contour for forestry and silviculture.

Section 515(c)(3) specifically states that an equal or better land use is required to permit a variance from the approximate original contour for mountaintop removal operations. That

section lists agriculture as a land-use option for which a variance may be permitted. The definition of agricultural use in Section 701.5 includes "the production of animal or vegetable life" which does not include forestry or silviculture. Silviculture can be accomplished on a wide range of slopes and does not require flat or rolling terrain. Forest or woodland is the primary land use in many of those areas appropriate for mountaintop removal operations. OSM does not believe a variance should be granted in cases where the premining contour was adequate for the proposed post-mining use and, accordingly no variance has been allowed for forestry or silviculture.

Another comment was received requesting an expansion of the land-use alternatives as an additional exemption to the approximate original contour variance. The alternative post-mining land uses which can be considered for permitting a variance to approximate original contour on mountaintop removal operations are recited in Section 515(c)(3) of the Act. OSM has no authority to expand this list. The Office has rejected the request to use a broader definition of post-mining land use options.

In the proposed rules, Section 824.11(a)(4) cross-referenced Section 816.33. This was a typographical error and, in these final rules, the reference has been changed to Section 816.133 as originally intended.

One commenter suggested that the alternative post-mining land use criteria of Section 816.133 should only have to be met if the post-mining land use will be different from the pre-mining use. The commenter felt that if the criteria of Section 816.133 had to be met for all mountaintop removal operations, there would be costly delays in permitting, unwarranted harrassment and unnecessary shutdowns of operations. OSM has decided not to change the regulations in response to this comment. Section 515(c) of the Act clearly requires that, before mountaintop removal is permitted, strict requirements must be met to ensure the post-mining land use will be appropriate to the area, carefully implemented and possible to achieve and maintain. The Act will not allow for an exception in cases where the post-mining land use is the same as the pre-mining land use. OSM believes that these precautions are required because of likely changes in intensity of use, new environmental concerns resulting from altered surface configurations and the irreversible nature of the change being allowed. It should be noted that compliance with Section 816.133 should not present a significant burden where, for example, agriculture is the proposed post-mining land use.

Another comment was received which requested that detailed land use planning should be required to assure that post-mining land use configurations at mountaintop removal operations blend into the surrounding terrain by adequately considering aesthetic values. This recommendation has not resulted in a change in the language of the rule. The Office believes that land use needs should be left to the discretion of a local or State land use agency, and that providing for the regulatory authority to require computer models for establishing post-mining land use and landscapes was beyond the immediate intent of the Act and would require a technology not yet commonly used in mining reclamation.

Several comments on Section 824.11(a)(6) requested a variance to the requirement for the retention of a coal barrier on the lowest coal seam at a mountaintop removal operation. The Office considered the benefits of removing a coal barrier under certain specified conditions. After a thorough review of available options, the Office has provided additional language which may permit an exemption to the retention of a coal barrier if the following conditions are satisfied: (a) The proposed mined site was mined prior to May 3, 1978, and the toe of the lowest coal seam has already been removed; or (b) a coal barrier adjacent to a head-of-hollow fill attains the elevation of the coal barrier, and if the head-of-hollow fill provides the stability ensured by the retention of an undisturbed coal barrier.

In the first instance, the coal barrier is already removed so stability must be achieved by construction methods. In the second instance, the need for the barrier no longer exists and its removal will maximize coal recovery.

Several comments were received concerning the time period and the financial burden placed on coal operators at current operations to bring these operations into compliance with the performance standards. OSM recognizes that many existing structures do not comply with the provisions established under the permanent regulatory program. The reader is referred to 30 CFR 701.11(e), 780.12 and 786.21 to ascertain what criteria and procedures operators must follow with respect to modifying or reconstructing facilities constructed or used prior to the effective date of these regulations. In addition, the reader is reminded that under 30 CFR 716.3, existing operations must comply with the initial regulatory program, which has requirements similar to Part 824. This fact should minimize problems arising upon implementation of the permanent regulatory program.

PART 825—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS—SPECIAL BITUMINOUS COAL MINES IN WYOMING

Part 825 applies to special bituminous coal mines that are located in the State of Wyoming. These regulations are intended to minimize, as far as practical, any adverse environmental or other effects of these special mines by practicable standards for onsite handling of spoil, elimination of depressions capable of collecting water, creation of impoundments, regrading, and allowing for retention of certain highwalls.

The literature used to draft these regulations includes: Land quality rules and regulations, Land Quality Division, Wyoming Department of Environmental Quality, 1975.

Two classes of special bituminous coal mines are covered separately by these regulations: (1) Those operating before January 1, 1972, and (2) those developed after August 3, 1977. Only those parts of the mine within the mine pit are regulated by Part 825. All other parts of the permit area must meet the standards set by the remainder of this Subchapter.

For mines operating before January 1, 1972, which meet the conditions of Section 527(a), of the Act, there is no practicable means of mining the coal or of reclaiming the lands as required by the Act. Therefore, highwalls are allowed to remain if found by the regulatory authority to be stable; benches are allowed; and the mine pit floor can remain and be graded, topsoiled, and seeded or be part of an approved impoundment. Any onsite spoil piles have to be graded and contoured to less than 17 degrees unless the regulatory authority determines that steeper slopes will accomplish the desired reclamation. Terraces will be approved by the regulatory authority if it is demonstrated that desired reclamation results will be achieved by their use.

The Office recognizes that the deep, open-pit type of coal mining in Wyoming has specific areas where adjustment to the general performance standards are warranted. These areas are backfilling and grading, since it is not possible to backfill completely and return to approximate or original contour or to blend the pit with the topography in these cases.

The extreme highwalls involved in deep-pit mining of coal cannot be adequately backfilled. However, they can be maintained with proper geological engineering techniques. Part of the stabilization may require benching the highwall to catch small rockfalls, control runoff, and maintain the face heights below the critical height for the material. Because highwall stability is a critical part of the reclamation

and this is a very nontypical situation, the Office has made provision for special reviews and controls at these sites.

The pit floor would probably be incapable of supporting significant plant growth. Backfilling, topsoiling, and grading are required to reestablish vegetative cover and to allow access for equipment, people, and animals. Access must be provided to allow the revegetation equipment to operate and provide for future productive use of the land. The water movement in and around the pit must be controlled. Some impoundments can be expected to be of sufficient size to necessitate the use of riprap to control water damage to impoundment structures.

The slope of spoil piles should be maintained at a low angle (17 degrees maximum) to minimize runoff damage and provide safe side slopes for revegetation equipment. If terraces do not interfere with the reclamation, they can be used. High slopes can be used with adequate reclamation and an approved postmining land use.

For mines on lands adjacent to those operating before January 1, 1972, and developed after August 3, 1977, operations within the mine pit are required to conform to requirements of Wyoming law. Slope specifications in this Part are taken from the Wyoming Department of Environmental Quality regulations, Chapter II, Section 1(a), except that the regulatory authority is designated as the deciding authority rather than the administrator of the Wyoming Land Quality Division.

To blend the mined site with its surroundings, the slopes are to be cut to no more than the maximum average slope of the surrounding topography. If this practice would disturb a significant amount of land that would not otherwise be disturbed, the regulatory authority can allow steeper slopes. The regulatory authority can independently establish the average slopes. The operator's determination of average slope must be reviewed and approved or disapproved by the regulatory authority.

For those recently opened special mines, the regulatory authority will have the right to decide how backfilling, grading, and contouring will be done to meet the future use of the land, since these are special cases and need to be dealt with on an individual basis. The method chosen must be designed to prevent degradation of the hydrologic balance, reduce water pollution, prevent adverse effects from water buildup, control erosion, and control water flow to the original drainage system or else an approved substitute will have to be developed. Similar provisions are found in Section 816.49(c) and the reader is referred to the preamble discussion of that section for an explanation of issues related to stabilization of slopes in permanent impoundments.

Terraces or benches, check dams, and other erosion-control techniques may be required to control water damage to reclaimed slopes where long unbroken contouring cannot control the volume generated or handle seepage for stream flow. These structures may need special engineering. Therefore, the regulatory authority must examine and evaluate the detailed plans for all such construction.

The object of regulating reclamation is to produce usable land after mining. To allow indiscriminate filling of depressions with water would produce small intermittent ponds and bogs, and might create overflow situations that could erode slopes and possible endanger people. Depressions, therefore, will not be allowed without proper planning and design.

Where permanent water impoundments are authorized under these regulations, the land shall be sloped, graded, and contoured to blend topographically with its surroundings. Access shall be provided to allow for corrections to be made, revegetation, future access for new lands used, and maintenance of the water control structures. It may be very difficult to reclaim all of the pitwall in these mine pits. Therefore, one-half of the shoreline shall be allowed to remain as a stabilized pitwall. The stabilization technique is to be independently verified and approved by the regulatory authority. Since the pit may impound substantial amounts of water, it will probably have approved post-mining use which will blend with the surroundings, and part of the impoundment shoreline will have to be reclaimed for these purposes.

Since the State of Wyoming could change its regulations and programs on special bituminous coal mines, leaving some areas without coverage by regulations, the Secretary will provide the necessary additions to meet the Act.

Several comments were received on Part 825. One comment recommended that the word "mines" be changed to "pits". This comment was rejected because the wording used in the regulations is a quotation from the Act, and the Office feels that the narrower word might lead to misintrepretation of the scope of this Part. Readers are referred to a discussion of this issue in the preamble Section 785.12.

Several commenters argued that if the Wyoming regulations are made more stringent, there should be no need for the Federal regulations to be amended. No change has been made in response to these comments, since this could be contrary to Section 527(b) of the Act.

For a full understanding of the Office's permanent regulatory program as it relates to special mines in Wyoming, the reader is referred to the preamble discussion of Section 785.12 and the definition of special bituminous coal mines in Section 701.5.

PART 826—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS OPERATIONS ON STEEP SLOPES

The regulations in Part 826 establish the minimum environmental protection standards an operator must meet to control the adverse environmental impact of steep slope mining, and this Part implements Sections 515(d) and 515(e) of the Act. Pages 41790–41791 (43 F.R. No. 181, September 18, 1978) of the preamble accompanying the proposed regulations are hereby incorporated by reference for an explanation of the basis and purposes of this Part. This Part contains special performance standards for mining on steep slopes and allows for a limited variance from the requirements for restoration to approximate original contour. All operations under this Part must meet the permit requirements of Sections 785.15 and 785.16 of these regulations. The reader is referred to those Sections and to the preamble discussion of them for an understanding of many of the issues addressed in this Part.

Sections 826.1, 826.2 and 826.11 set forth the scope, objectives and applicability of this Part. Editorial changes have been made in Section 826.1 of the proposed regulations to assist the reader through additional clarification and by using the terms defined in 30 CFR 700.5 and 701.5. Section 826.11(b) has been modified by adding a reference to mountaintop removal operations, which are not governed by this Part, and by deleting the reference to the variance granted under Section 515(e) of the Act which is, in fact, subject to this Part.

Literature used in writing this Part includes the works cited in the sections of this preamble relating to the disposal of excess spoil (Sections 816.71–816.74).

§ 826.12 Steep slopes: Performance standards.

1. Paragraphs (a) and (b) of this Section implement Section 515(d)(2) of the Act.

2. Several commenters objected that the proposed regulations in Section 826.12(a) would preclude the construction of access and haul roads into the permit area because spoil could not be placed on the downslope and road fills could not be constructed. Haul roads are obviously essential for access to the mine area. The Office agrees with

these commenters and the language has been changed accordingly.

3. One commenter requested that Section 826.12(a) be modified to allow unmarketable tree materials to be placed on the downslope as a windrow. It was suggested that such a wind-row would act to control siltation and would provide valuable wildlife habitat. No modification has been made in the regulations in response to this comment. Placement of debris on the downslope is explicitly prohibited by Section 515(d)(1) of the Act. In addition. The Office believes that decomposition of the woody material would lead to instability which could create long-term sediment problems on steep-slopes (Kimball, 1974, p. 35) and, therefore, the provisions of the Act and the regulation would not be satisfied.

4. Several commenters suggested that proposed Sections 826.12(b) and 826.13(a)(1) (which are now combined in Section 826.15(a) be modified to require the operator to establish the minimum static safety factor would be achieved only for those slopes in excess of the angle of repose or, alternatively, in excess of 1*v*: 2*h*. The commenters pointed out that Section 816.72 would permit valley fills with slopes as steep as 26°, which is obviously greater than the 20° slopes that as a rule defines steep slopes. The Office has not adopted the commenters' suggestion. Section 515(d)(3) of the Act specifically requires that all backfilled material on steep slopes must maintain stability. This special statutory admonition requires special precautions in steep slopes area, where instability creates serious problems. The commenters' argument by analogy to Section 817.72 is not persuasive. While Section 816.72(g) does allow for slopes of 26°, Section 816.72(a) requires that the entire fill, including the steeper slope areas, must attain a static safety factor of 1.5, even higher than the 1.3 required on steep slopes.

5. Section 826.12(c) implements Section 515(d)(3) of the Act. Regulatory authority approval is required for all disturbance above the highwall. In addition to evaluating the request for approval in light of the requirements of this Part, the regulatory authority will be responsible for enforcing the language of the Act which provides in Section 515(d)(3) that "the land disturbed above the highwall shall be limited to that amount necessary to facilitate. . . compliance."

The Office considered adding that language to Section 826.12(c) but thought it unnecessary, since the language of the Act is self-executing.

6. Several commenters requested that Section 826.12(e) be revised to allow the burial of woody material in the pit against the highwall. It was argued that such placement might pose no threat to the stability of the backfill. The Office considers the technical support for this contention inconclusive. Woody material eventually will deteriorate and decompose, creating voids, depressions, and tension cracks that channelize water in the fill and eventually cause mass instability and potential erosion and siltation problems (Hopkins and others 1975, p. 9, and Weigle, 1966, p. 73). Several of these comments suggested that woody materials be allowed in the fill after the regulatory authority had determined that the minimum static safety factor could still be attained or that stability would not be jeopardized. Most States have allowed the practice in the past. Stability, erosion protection, and minimization of siltation must be achieved. If organic material subject to decay can be buried without risk of voids being created, the regulatory authority may permit the burial of such material beneath the highwall. The Act, however, specifically requires that post-reclamation stability be assured on steep slopes (Section 515(d)(3)) and the permit application must assure the regulatory authority that the applicant will comply with the stability requirements in Section 826.12 (b). Pending further study of the issue, the placement of woody material in steep slope fills will be allowed only if approved by the regulatory authority.

7. Section 826.12(f) has been promulgated in furtherance of the requirement for long-term stability in Section 515(d)(2) of the Act.

Several commenters argued that no impoundments, either temporary or permanent, should be permitted on steep slopes. The following alternatives were considered:

(a) Permit impoundments which were constructed in compliance with the provisions of Subchapter K, and

(b) Prohibit construction of impoundments on steep slopes.

Specific design and construction requirements have been developed to ensure the stability of impoundments in Section 816.46. The regulations further provide criteria for sediment storage volume, detention time, dewatering characteristics, and sediment removal. To prohibit the use of these impounding structures would eliminate a major mechanism for controlling water runoff from the mine area and siltation of streams. In effect, mining would be prohibited in steep slope areas if sedimentation basins were not permitted. The commenters argued that slope instability problems dictate that these retaining structures pose a serious hazard to the safety to the general public and the environment. The Office recognizes that additional precaution must be exercised in the construction of impoundments. Appropriate regulations have been promulgated to achieve this need. This Office further determined that specific prohibition of impoundments in steep slope areas was not the intention of the Act. Consequently, no change has been made in the regulatory program.

§ 826.15 Steep slopes: Limited variances.

1. Section 826.15 implements Section 515(e) of the Act.

Several comments stated that Section 515(e) of the Act did not restrict the variance provisions to steep slope mining operations. The Office has not accepted the position urged by these comments. A review of the Congressional Record (H 7583, H 7584, (July 21, 1977) indicates that Section 515(e) of the Act is restricted to permitting variances in the provisions of Section 515(d) of the Act. Accordingly, no change has been made and the variance will be available only from the requirements of Section 515(d) of the Act. The reader is referred to the Preamble discussion of 30 CFR 785.16 for a more detailed analysis of this issue.

2. In reference to Paragraph (a), a commenter stated that the required backfilling to cover highwalls would in fact provide no variance to approximate original contour requirements in 95 percent of the terrain involved.

Section 515(e)(2) of the Act is interpreted by the Office to permit a variance from the requirements to restore to approximate original contour set forth in Section 515(d)(2), but not to exempt the operator from backfilling to the top of the highwall as stated in both Sections 515(d)(3) and 515(e)(1). It is, thus only to provide a variance from contour requirements. Regardless of the approved postmining land use and other requirements of Sections 515(e)(3) and (4), highwalls must be backfilled to a stable condition.

3. Section 826.15(b) implements and elaborates on the minimum criteria for measuring watershed control improvment as required by Section 515(e)(1) of the Act. The criteria set forth in 30 CFR 816.41 provided the basis for determining the improvement of the watershed hydrology during mining.

4. With respect to Section 826.15(c), several opposing comments were received regarding the distrubance of lands above the highwall to provide additional spoil to reclaim the affected area. The following three alternatives were considered by the Office when addressing the comments:

(a) Make no change to the proposed permanent regulations,

(b) Permit no disturbance above the highwall, and

(c) Modify the proposed regulation to reflect more effectively the intent of the variance.

Alternative (a) obtains its authority from Section 515(d)(3) of the Act, which requires that disturbance of land above the highwall shall be limited to the distance necessary to facilitate compliance with the environmental protection standards. The proposed regulations provided specific guidelines by which the regulatory authority could evaluate and monitor the proposed activities of an operator to ensure compliance of the permittee with the established regulations.

Alternative (b) would permit no disturbance above the highwall. It was argued that the area above the highwall should be disturbed only in extreme cases. Such disturbance would displace additional overburden material which would be subject to erosion and slope instability.

Under alternative (c), which the Office selected, more flexibility would be afforded the operator and the regulatory authority to respond to site-specific conditions. The regulatory authority must restrict the area disturbed above the highwall according to site conditions. [The denial to allow disturbance of the area above the highwall may preclude mining in some steep slope areas unless the highwall can be blended with additional spoil from above.] If disturbance above the highwall were limited, equipment maneuverability might be impossible for a certain distance, which could create hazardous conditions for an operator working adjacent to a highwall. It was further considered that the construction of highwall diversions during and following mining might have been hampered by the regulations as proposed, thus reducing the control of runoff and resulting in erosion.

The Office has reevaluated the proposed permanent regulations in view of the comments received and has rewritten Section 826.15(a)(3) to permit a determination of appropriate disturbance above the highwall on the basis of the proof presented in the permit application and reviewed by the regulatory authority.

5. Several paragraphs proposed for this Section have been deleted. A proposed requirement for certification of designs by certain registered professionals could be overly restrictive, since other professionals may be equally capable of performing the function. Also, there may not be enough registered professionals to fulfill all their other functions as well as this one, under the regulations without causing undue delay or unwarranted high costs. The permit review procedures, originally proposed in Section 826.13, have now been moved to 30 CFR 785.16, where the Office feels they more logically belong.

§ 826.16 Steep slopes: Multiple seam.

1. Comments were received which suggested that excess spoil from an upper bench should be allowed to be deposited on a preexisting mine bench. The Office has accepted these recommendations, if the permittee complies with the regulations now found in Section 826.16. The Office believes that if the spoil is transported and placed to the appropriate grade and safety factor and according to Section 515(b)(22) of the Act, that remaining unreclained mine lands may be reclaimed and restored to more fully comply with the intent of the Act. By allowing for disposal of excess spoil in this manner, lands can be restored which might otherwise contribute to erosion and be unstable, and can be restored without use of public funds. It should be absolutely clear, however, that it is not the intent of this Office to permit end-dumping or dropping of overburden over the downslope from one bench to another unless the performance standards under 30 CFR 816.74 can be satisfied.

2. It was recommended by several commenters that multiple seam steep slope mining be permitted in previously mined areas without imposing the requirement to return the land to approximate original contour. The following alternatives were considered in response to these comments: (a) require total reclamation; (b) reduce the highwall angle, and grade the spoil to an approved contour; and (c) cover the highwall to the maximum extent possible with the existing spoil, and stabilize the remaining highwall.

In alternative (a), steep slope operations conducted in areas that predate the permanent regulations would be required to meet all the reclamation requirements of the Act including elimination of the highwall. The Act does not contemplate a special variance for previously mined areas. This alternative might severely limit recovery from those sites where surface mining operations prior to the Act have left pits containing significant reserves. In some of these areas the overburden has been disposed in such a manner that precludes restoration to the original contour. This can occur when the spoil has been spread over a large area rather than piled, or when the spoil has stabilized environmentally and is not a health or safety hazard. In these cases, the environment may be damaged more by attempts at restoration than by leaving the old workings in their stable conditions.

Alternative (b) would require the operator to reduce the angle of the highwall to a stable angle for the material involved. Some previously mined pits might not have enough available spoil to meet even these standards. The area would have to be graded and revegetated as required by Part 816. This alternative would not result in reclamation to the high degree required under Section 515(d) of the Act.

Alternative (c) would allow all previously mined pits to be mined, but would permit a significant amount of reclamation that would not meet the standards of the Act. Some highwalls might be permitted.

The Office has selected alternative (a). The Office recognizes that many abandoned mines may presently be unminable under this standard. However, economic factors may make more coal recovery and deeper cuts feasible in the future, and at that time sufficient spoil would be available from the increased cut to meet the requirements of this Act.

The Office believes that, in the long run, alternative (a) is the most environmentally protective. The Office has no information which would lead it to believe that the loss of unminable reserves as a result of this restriction will be critical to the Nation's coal supply or coal cost. For a further discussion of the requirement to return to original contour the reader should refer to the preamble discussions of 30 CFR 816.101 and 819.

PART 827—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS — COAL PROCESSING PLANTS AND SUPPORT FACILITIES NOT WITHIN THE PERMIT AREA FOR A MINE

The reader is referred to the preamble discussion of Section 785.21 of the final regulations, which contains the requirements for permits for coal processing plants or support facilities that are not located within the permit area of a specified mine, for a discussion of other issues relevant to this Part. This Part should be read together with Section 785.21.

Coal processing plants are usually located at the mine mouth, but frequently one central preparation plant may serve several mines as a focal point for coal preparation and shipment to market. The coal may be transported to this central plant without removal of the rock and other impurities contained in the run-of-mine coal. Coal may also be shipped by barge, rail, or truck to a site far removed from the minesite and processed there before use. After shipment to the point of use, additional processing may take place. Associated with coal processing plants are coal wastes, waste piles and disposal sites, and other features which can seriously damage the environment and property. In order to ensure proper protection of the environment and public

property in compliance with Section 102 of the Act, the same general requirements for permits, bonding, reclamation, performance standards, and enforcement will apply to coal processing plants and support facilities not located within the permit area for a specific mine as for those located at mines.

Section 827.12 contains specific performance standards which have been discussed in previous Sections of the preamble for similar facilities within the permit area, and which OSM feels are also applicable to facilities not located within the permit area. For more specific information, the reader is referred to the respective sections of the Preamble which discuss those performance standards. References in Section 827.12(b) to other regulations (Paragraph (b), roads; (e), impoundments; (1) underground mining; and (m) reclamation) have been modified since the proposed version to reflect modifications in the numbering scheme of Parts 816 and 817.

1. A number of commenters questioned OSM's authority to regulate coal processing plants and facilities not located within a permit area. Section 701(28)(B) of the Act defines surface coal mining operations to include areas upon which such activities (cleaning, concentrating, or other physical processing or preparation, loading of coal . . .) occur, and surface coal mining operations are controlled by the Act. The Office believes feels that "at or near the mine site" in Section 701(28)(A) of the Act applies only to "loading of coal for interstate commerce" and finds it has the authority to control coal processing plants and support facilities not located at or near the minesite or not within the permit area for a mine, under Sections 701(28)(B) and 701(17) of the Act. The reader is also referred to 30 CFR 785.21 for further discussion of this issue.

2. In considering a number of comments concerning processing plants built and operating at the time of promulgation of these regulaions, the Office considered the alternatives of (a) not requiring compliance with Part 827, and (b) blanket requirements that all existing structures be forced into compliance. It is recognized that while compliance with this Section is required under the Act, it could be very burdensome and costly for existing structures and facilities to comply. The Office has resolved this matter in Sections 701.11(e), 780.12 and 786.21, which modify the application to existing structures of design standards, but not performance standards. The reader is referred to the preamble discussion of those sections for a discussion of existing structures.

3. One comment requested deletion of Section 827.12(1) on the basis that Section 515(b)(12) of the Act and the regulations in Section 816.79 refer to "surface coal mining *operations*," the Office has rejected this suggestion because Section 515(b)(12) of the Act also states "in order to prevent breakthroughs and to protect the health and safety of the miners." The Office believes that this protection applies equally well to processing "operations" as to "mines." It is further noted that "surface coal mining" is not defined in the Act to exclude processing facilities.

4. Several commenters suggested that different standards should apply to tipples with washing facilities than to those without them, since tipples without washing facilities result in less environmental damage. The Office believes that the performance standards in this Part are appropriate for all facilities, and the rule has not been changed in response to the comment. If one facility is causing less environmental damage than another, it may require less corrective action to comply with these rules. However, the minimum standard of performance and maximum allowable environmental degradation must be the same for both types of facilities, as provided in this Part.

PART 828—SPECIAL PERMANENT PROGRAM PERFORMANCE STANDARDS—IN SITU PROCESSING

This Part provides environmental performance standards for in situ processing operations which use coal in place or recover coal by means of processing fluids injected into the coal-bearing strata. The preamble accompanying the proposed permanent regulatory program found in 43 F.R. 41791-41792 (September 18, 1978) is hereby incorporated by reference and sets forth the basis, purposes, and alternatives considered in drafting this Part.

One commenter recommended that the proposed language in Section 828.11(e) be rewritten to provide the regulatory authority with adequate latitude for restoring the affected ground water resource to a condition suitable for supporting the postmining land use. The alternatives considered based on this comment were: (1) requiring restoration of ground water quality to approximate pre-mining levels; and (2) allowing alternative ground water quality limitations dependent upon future land use.

Alternative 1 reflects the intent of Section 515(b)(10) of the Act in that the impact of mine related activities on the hydrologic balance and to the ground water shall be minimized. As such, the regulations must provide adequate provisions to ensure that future land use not be prohibited because of disruptions to the pre-mining hydrologic conditions. Appropriate flexibility has been incorporated into the regulations by providing that the ground water system shall be returned to "approximate premining levels." On the other hand, it was argued that the proposed language should be broadened to permit alternative ground water conditions other than the conditions existing prior to mining. The restoration of ground water conditions, it was argued, should primarily refect the needs based on proposed land use as determined by the regulatory authority. Alternative 2 was rejected because the Office determined that sufficient latitude was provided the regulatory authority to establish what "approximate premining conditions" must be achieved following the processing activity. The Office believes that the ground-water resources on lands adjacent to the permit area must also be protected. Many of these adjacent lands will continue to support preprocessing land uses and, as such, continued use must be assured.

One commenter stated that air quality monitoring for in situ processing activities should be eliminated. The Office considered the following alternatives as a result of this comment: (1) delete all requirements for monitoring; (2) require monitoring as required by applicable Federal and State regulations; and (3) require periodic monitoring for phenols, nitrogen compounds, carbon compounds, windspeed, direction temperature and air quality characteristics determined appropriate by the regulatory authority after consultation with air quality agencies.

Requirements for the monitoring of air quality at in situ processing operations were not specifically addressed by the Act. The commenter maintained that adequate regulations exist under existing Federal and State standards and there is little necessity of applying another level of regulations which would duplicate existing requirements.

The second alternative would establish proposed regulations using language similar to that of Section 508(a)(9) of the Act to ensure that applicable Federal and State laws and standards would be achieved. The proposed regulations took into account that in situ processing of coal would generate and release emissions of phenols, nitrogen compounds and oxides of carbon which would adversely impact the air quality of the region (Edgar, pp. 47-49). Vegetation found on the lands beneath and adjacent to the processing operations may be stunted or destroyed by adverse compounds emitted. Additional requirements were specified to ensure that

the regulatory authority would have adequate latitude to require monitoring of air quality at in situ processing operations when Federal or State regulations may not address these air quality standards. These proposed regulations would have assured evaluation of the impact of in situ processing on the ambient air quality during and following the operations.

Alternative 1 was rejected because the Office has the responsibility under the Act to ensure that applicable air quality laws and standards are met. (See preamble discussion of Sections 816.95 and 780.15).

The Office has selected alternative 2, which requires the regulatory authority to take into account existing air quality standards of other Federal or State agencies. Although the general types of pollutants are known, identification of specific air quality characteristics which must be monitored (Alternative 3) has been deleted at this time until additional data becomes available from in situ activities. As one commenter pointed out, there are more than 1,000,000 know carbon compounds and the Office believes the rules as proposed may have been too sophisticated for effective implementation by regulatory authorities. The alternative selected provides regulatory authorities with maximum flexibility to tailor the monitoring program to site-specific needs.

Several commenters stated that the proposed regulations were too complex and sufficient latitude was not provided the regulatory authority to handle site-specific situations. No change has been made in this Part in response to these comments because the Office was presented no rationale in support of specific changes and because the Office believes the general requirements of Part 828 would be appropriate to any in situ operation.

SUBCHAPTER L—INSPECTION AND ENFORCEMENT

Subchapter L is divided into Part 840 (Inspection and Enforcement by the State Regulatory Authority), Part 842 (Federal Inspections) Part 843 (Federal Enforcement) and Part 845 (Civil Penalties). The structure and purposes of Subchapter L and its four Parts are set forth in the Preamble to the proposed regulations and are not repeated here. The reader may refer to the preamble to the proposed regulations at 43 FR 41792–41797 (September 18, 1978) for this information.

General Comments

One commenter suggested that inspectors should be required to be licensed engineers. The Office decided against this. Inspectors are called upon to enforce regulations which are based on the teachings of many scientific and engineering disciplines. It would be impossible to find inspectors who were licensed in all of these disciplines. In any event, it is not necessary to require such experience. If, while enforcing the regulations, an inspector feels engineering or other technical advice is needed, he can obtain guidance from technical experts on OSM's staff or the State regulatory staff.

The same commenter suggested that inspectors who are not licensed engineers might be deemed to violate State licensing laws if they made interpretations of the Act or the regulations using judgment involving the application of engineering principles. The Office doubts this is an accurate interpretation of the State licensing laws, but if it were, such a State law would be unconstitutional if applied to Federal inspectors carrying out Federal law.

Throughout Subchapter L, references to cooperative agreements or programs were deleted because they were redundant. A cooperative program is merely a State program applied to Federal lands pursuant to a cooperative agreement, and thus reference to a State program is sufficient. Also, references to coal exploration were added as appropriate throughout Subchapter L.

Many provisions in Subchapter L were modified to clarify, shorten, or improve the organization of the regulations.

PART 840—STATE REGULATORY AUTHORITY INSPECTION AND ENFORCEMENT

STATUTORY AUTHORITY: 102, 201, 501(b), 503, 512, 517, 518, 521, and 523 of Pub. L. 95–87, 91 Stat. 448, 449, 468, 470, 483, 498, 499, 504, 510 (30 USC 1202, 1211, 1251, 1253, 1263, 1267, 1268, 1271, 1273).

§ 840.11 Inspections by State regulatory authority.

Subsection (a) was modified to provide that the State regulatory authority shall conduct "an average of" at least one partial inspection per month. This conforms with the language of 517(c) of the Act. A similar change was made in Subsection (b).

A new Subsection (c) was added to provide for periodic inspections of coal exploration operations. Such inspections are necessary if a State is to enforce the coal exploration provisions of its State program. The previous subsection (c) was renumbered as (d) and modified to include a reference to the new subsection (c).

Comments were received requesting the Office to delete the reference in 840.11(c)(1) and 842.11(d)(1) to conducting inspections to monitor compliance at all operations, including those which operate on weekends and holidays and at unusual hours.

Section 517(c) of the Act requires the regulatory authority to conduct inspections "on an irregular basis." The phrase "irregular" is not defined in the Act and could be taken to have a number of meanings. The commenters implicity interpret the phrase as meaning only that inspections should not occur on the same day of the week or the month or some other predictable date.

To accept this narrow definition would be actually to encourage some of the worst types of violations. Some wildcatters (persons operating without a permit) operate only on nights or holidays. If the comments were accepted and no inspections were carried out at night or on holidays, these operators, often among the most flagrant violators of the Act, could operate with impunity. There are also some operators who will obey the Act and regulations only because they expect to be inspected. If no night time or holiday inspections were held, such an operator might, for instance, discharge acid drainage during nights and holidays, knowing that no inspections would be conducted then. Also, if a citizen reported that an operator was committing violations during holidays or evenings, the regulatory authority would be unable to respond effectively to the complaint unless its inspectors make nighttime or holiday inspections.

Some commenters felt that inspections during unusual hours and holidays would be used to harrass operators. The Office and the States do not conduct inspections to harrass operators. The Office and the States will conduct their inspections in a reasonable and fair manner that will not interfere with operators who are in compliance.

§ 840.12 Right of entry.

Some commenters proposed that a State should not be required to have statutory authority to enter and inspect operations, arguing that this would needlessly force States to request their legislatures for new laws. The Office rejected this proposal because nonstatutory authority is not certain enough for the Secretary to judge accurately the adequacy of a State program.

Other commenters urged that the language of § 840.12(a) should clarify to whom the "appropriate credentials" should be presented (such as the person responsible for the operation of and safety at the mine or the individual who, based upon reasonable inquiry by the authorized representative, appears to be in charge of the operation). They believed that the language of Section 517(b)(3) of the Act

implied that an attempt should be made to notify the operator or his authorized representative before entry into the mine area.

To interpret Section 517(b) (3) of the Act as suggested would seriously undermine enforcement of the law. If an inspector were required to present his credentials to a particular individual before commencing an inspection, an operator could prevent an inspection by removing this employee from the site while serious environmental or other harm might be occurring. Further, with regard to certain types of violations which are difficult to prove unless they are observed when occurring, an operator might make the particular individual temporarily unavailable and delay an inspector long enough to cover up or cease illegal practices, thus avoiding detection. OSM interprets Section 517(b)(3) of the Act as meaning that the operator who encounters the inspector on the permit area is entitled to expect the inspector to present appropriate credentials if requested to do so. It is current practice in most cases to seek the foreman upon first arriving on the mine, present credentials and invite the foreman to accompany the inspector.

Comments were received that inspections should not be conducted without search warrants. Although *Marshall* v. *Barlow*, — U.S. —, 56 L. Ed. 305, 98 S. Ct.1816 (May 23, 1978), held that search warrants are required for certain types of inspections, it has been ruled that search warrants are not required for the field inspections contemplated under the Act (*In re: Surface Mining Regulation Litigation*, 452 F. Supp. 327, 11 E.R.C. 2708 (D. D.C., August 24, 1978). However, it appears that search warrants are required to enter a building to inspect records, if the permittee or operator does not consent to entry. Section 840.12(b) has been amended accordingly.

Comments were received that the regulatory authority should not be required to have authority to conduct inspections without a search warrant. This comment was not accepted except with respect to entrance into buildings without consent of the permittee or operator. A requirement that an inspector obtain a search warrant before making an inspection has considerable potential for impairing enforcement of the Act and is not required by law. It restricts an inspector's ability to respond quickly to emergency situations; it requires inspectors to spend time on the paperwork involved in getting the warrant; and, depending on the criteria for obtaining a search warrant, it may prevent the regulatory authority from accomplishing certain inspections which are required under the Act.

Certain comments regarding Section 842.11, which are discussed below, are relevant to similar provisions contained in Section 840.12.

§ 840.13 Enforcement authority.

Numerous comments were received requesting clarification as to what enforcement authority would be required in a State program. This issue was raised also with respect to Part 732, which is discussed above. The Office considered setting forth minimum criteria for State program enforcement authority in the regulations. However, it was determined that this approach ran the risk of being either unduly restrictive or not restrictive enough, if the Office failed to take into account some alternative or problem. Accordingly, it was deemed preferable to leave the statutory standard as the requirement, without further definition in the regulations. The Section was rewritten to conform with the statutory language and to include all relevant references to the regulations and the Act.

Subject to the foregoing, the Office believes that each State program must meet the following criteria with respect to sanctions and related procedural requirements:

(1) It must require issuance of cessation orders by the inspector immediately upon observing a violation of the State program or a condition or a practice which causes or can reasonably be expected to cause an imminent danger to the health or safety of the public or a significant, imminent environmental harm to land, air or water;

(2) It must require issuance of a cessation order immediately upon failure to abate under a notice of violation within the abatement period specified;

(3) It must require issuance of a notice of violation by the inspector immediately upon observing a violation of the State program;

(4) The notices of violation must provide for remedial action and a reasonable time to abate the violation, but not longer than 90 days from issuance of the notice of violation;

(5) The cessation orders must impose affirmative obligations to abate the violation, condition or practice as expeditiously as possible in cases where cessation of the operation does not in itself abate the violation, condition, or practice (except that a cessation order issued for failure to abate may not extend the time for abatement);

(6) It must provide for revocation and suspension of permits to mine, where it is found that a pattern of violations of any requirement of the State program exists or has existed and that the violations were willful or were caused by the permittee's unwarranted failure to comply, and it must provide for revocation or suspension in all circumstances comparable to those mentioned in Section 521(a)(4) of the Act and 30 CFR 843.13;

(7) It must provide a formal review of notices of violation and cessation orders comparable to that provided in 30 CFR 843.16; and;

(8) It must provide for injunctive relief with respect to the types of actions and inactions mentioned in 521(c) of the Act and 30 CFR 843.19.

Similarly, the Office believes that each State program must meet the following minimum criteria with respect to penalties and related procedural requirements:

(1) It must provide for civil penalties of up to at least $5,000 per day for violation of the State program or of any permit issued thereunder, with mandatory penalties for cessation orders, and must result in penalties at least as high as those provided for in 30 CFR Part 845;

(2) It must provide for a mandatory daily civil penalty of at least $750 for failure to correct a violation within the abatement period permitted for its correction;

(3) It must provide that in determining the amount of the civil penalty, consideration will be given to the four criteria mentioned in Section 518(a) of the Act;

(4) It must provide for assessment and payment of penalties within the time periods provided for in Section 518(a)-(c) of the Act and 30 CFR Part 845;

(5) It must provide that failure to make timely final payment or payment into escrow will result in a waiver of all legal rights to contest the violation or the amount of the penalty;

(6) It must provide for a public hearing on the record regarding the violation and the penalty, with no opportunity for a trial *de novo* after the hearing (whether or not the hearing is waived by the operator). Payment into escrow of the proposed assessment must be required as a condition to obtaining the public hearing on the penalty;

(7) It must provide for criminal penalties at least as high and imprisonment for at least as long as provided in:

(a) Section 518(e) of the Act for violations of the type mentioned in Section 518(e) which occur under a State program;

(b) Section 518(f) of the Act for offenses on the part of corporate directors, officers, and agents, of the types mentioned in Section 518(f), which occur under the State program; and

(c) Section 518(g) of the Act for offenses of the types mentioned in Sec-

tion 518(g) which occur under the State program.

Minimum requirements for citizen participation in the enforcement of a State program are discussed with respect to Section 840.15 below.

A number of commenters asked whether a State must have a point system like that in Part 845. Some commenters reacted negatively to Part 845, stating that it produces fines that are higher per violation than the fines the Mine Safety and Health Administration ("MSHA"), formerly the Mining Enforcement and Safety Administration ("MESA"), imposes. It is difficult to respond to this criticism because the regulations administered by MSHA do not prohibit the same types of conduct as those administered by OSM. Also, it is not clear that MSHA's fines are lower when considered in the aggregate—MSHA may find more violations per inspection. Furthermore, many persons believe that MSHA's fines are too low to be effective. Also, there is reason to believe that OSM fines may be exceeded by those imposed by some States. For instance, OSM's average fine for mining without a permit is $3,500, its highest fine for that violation to date was $5,000 and its lowest was $700. One State, however, recently imposed a fine of $10,000 for mining without a permit.

The point system used by the Office provides a number of benefits. If properly administered, it assures rational consideration of the four statutory criteria and equal treatment of all violations. Futhermore, use of a point system actually simplifies, as well as rationalizes, the imposition of penalties, an important consideration given the volume of violations to be expected.

Futhermore, use of a point system assures nationally uniform enforcement, which Congress clearly contemplated. The Act (Section 503(a)(7)) requires State programs to have rules and regulations "consistent with" the Secretary's regulations. In addition, Section 518(i) of the Act requires that the State provisions must have civil and criminal penalties "no less stringent" than those set forth in Section 518 and the "same or similar" procedural requirements relating thereto. A similar clause appears in Section 521(d) regarding enforcement. While there are obvious reasons for providing for differences in performance standards based on topographic, climatic, and other regional variations, there is no justification for regional or State-by-State variations in penalties, and the "same or similar" language is meant to highlight the need for nationwide uniformity of enforcement.

While OSM believes that penalties should not vary from State to State and that the point system assures this result, there may be other ways to accomplish the same end. For instance, a system which uses a "range" of penalties for different violations might be acceptable, depending on the range.

OSM has identified and included in the minimum criteria for penalty assessments mentioned above some elements that are critical, the most important of which are:

(1) Assessments must be made within the time frames contained in the Act and Part 845. This is essential for nationally uniform enforcement. Furthermore, it establishes clear guidelines by which the administration of State programs can be evaluated. Whether a judicial system for assessing penalties, as opposed to an administrative system, can accomplish this is discussed below.

(2) Payment of the penalty into escrow must be required as a condition for obtaining a formal hearing.

(3) There must be opportunity for a public hearing with no subsequent trial *de novo*. One of the most serious problems under the Federal Coal Mine Health and Safety Act of 1969 was that MESA had to establish its right to the penalty in a trial *de novo* even though the operator had already been given an opportunity for a fair hearing. With docket delays of several years, this gave a tremendous incentive to the operator to delay, in the hopes that by the time the final *de novo* trial occurred witnesses would be gone or evidence would be lost. While the escrow provision in the Act eliminates one incentive to delay, the other incentive to delay—the hope that the evidence will be lost or become stale—will still exist unless the right to trial *de novo* is eliminated. In drafting the Act, Congress clearly intended to end the problem caused by the right to a trial *de novo* in the 1969 Mine Safety Act, for (while following that Act in some respects) it eliminated the right to a trial *de novo*.

The question was also raised whether, in State programs, penalties must be administratively assessed. Section 518 of the Act provides for administrative assessment of penalties by the Secretary, with respect to Federally-issued notices of violation and cessation orders. The penalty is assessed by the Secretary, after an opportunity for a formal administrative hearing. The Secretary must inform the operator within 30 days after issuance of the notice of violation or cessation order of the proposed amount of the penalty. The operator may contest the penalty in a formal administrative hearing, but to do so he must pay the penalty into escrow. Under Section 518(c) of the Act, the operator has 30 days after receipt of the proposed penalty to pay it in full or pay it into escrow.) This time limit is too short, because the abatement period may be as long as 90 days, in which case the statutory criterion of good faith in rapidly complying cannot be considered before the penalty is assessed or required to be placed in escrow. However, the Office has eliminated this problem by giving the operator an opportunity for an informal hearing (conference). At the conference, the proposed penalty assessment may be adjusted. The formal administrative hearing is deferred until conclusion of the conference, which prevents the premature finalization of the assessment mentioned above.)

In comparing administrative and judicial assessment of penalties, the following points should be considered:

1. Administrative agencies which deal with surface mining matters are probably better able to assess appropriate penalties than courts, because of their greater experience with and understanding of the Act and its application to surface and underground mining operations.

2. Court dockets may be so crowded that penalty assessments will be delayed greatly beyond the time periods specified in Section 518 of the Act. This may be exploited by operators, since it defers payment of penalties. It will make enforcement more difficult in States with crowded dockets and will give noncomplying operators in those States an economic advantage over their counterparts in other States. Also, long delays in assessing penalties mean that witnesses may not be available or evidence may be lost by the time the case is finally heard.

3. OSM regulations assure citizen access to the penalty process, while this may not be true of some judicial systems.

4. An administrative system is particularly appropriate for assessment of civil penalties under the Act. In such a system, unlike the judicial system, a tentative penalty can be proposed without a full, trial-type prior hearing, and trial-type hearings need be held only for those cases where the operator disagrees with the penalty. Thus administrative assessment is quicker and more efficient. This is particularly important where there are a large number of penalties, requiring many hearings.

5. An administrative system of assessing civil penalties is more apt to produce uniform penalties for the same violations and to do so in accordance with the requirements of the Act.

While the regulations do not specifically preclude a judicial civil penalty system, OSM's present interpretation, because of the above reasons and its understanding of Congressional intent, is that such a judicial system would not satisfy the requirements of

the Act and regulations for an approvable program.

In a related comment, one State asked whether it could provide for, but not use, a penalty point system. This would not be acceptable. A State must administer and enforce all parts of its program.

Certain issues discussed with respect to Part 843, particularly Section 843.11 and Section 843.12, are pertinent to Part 840.

§ 840.14 Availability of records.

Subsection (b) was amended to reflect the fact that certain other provisions of the regulations provide for confidential treatment of some kinds of information.

In reviewing the comments relating to subsection (b), the Office realized that the proposed draft did not conform with the requirements of Section 517(f) of the Act. Section 517(f) requires documents to be "immediately available" at locations which are "conveniently available." The drafters of the proposed regulations had mistakenly interpreted Section 517(f) as requiring that *documents* (rather than *locations*) be "conveniently available," and had defined this term to mean 5 days, in the case of a county or multicounty location, or 24 hours in the case of a State or central location.

The revised Subsection (b), which requires documents to be "immediately available," does not attempt to define further the meaning of that term. The 5 day/24 hour concept used in the proposed draft was deemed too stringent in some cases and not stringent enough in others. As pointed out by some commenters, if an inspector is in the field, it may take several days for his report to reach the place where records are kept. This must be considered in determining whether the State has made the documents "immediately available." On the other hand, if documents are on file only in a central location and there is a telecopier in the field office, copies could and should be provided in fewer than 24 hours. On balance it seems preferable not to try to define "immediately available," but to interpret it as cases come up.

Subsection (c) was deleted because its subject matter is dealt with in 30 CFR 787.15, and subsection (d) was renumbered as subsection (c). It was questioned whether OSM can enter into agreements with States regarding procedures for handling investigative and enforcement reports, in order to protect preparation for hearings and enforcement proceedings, as provided in this Subparagraph. It was argued that this violated the mandate of Section 517(f) of the Act for public availability of documents and precludes public access to OSM-held documents at the very time when such access is essential for a fair resolution of enforcement proceedings.

The comment was rejected. Section 840.14 implements 517(f) of the Act. Withholding of special investigative or prosecutorial reports prepared for use in particular enforcement proceedings is justified by both the attorney "work product" rule of evidence and the philosophy underlying enactment of 5 USC 552(b)(7), which exempts from the mandatory disclosure requirements of the Freedom of Information Act "investigative records compiled for law enforcement purposes, but only to the extent that the production of such records would * * * interfere with enforcement proceedings."

§ 840.15 Public participation.

Comments were received concerning the extent to which State programs must provide for citizen participation (these comments were summarized above with respect to Part 732).

Section 521 (a)(1) of the Act provides as follows:

"When the Federal inspection results from information provided to the Secretary by any person, the Secretary shall notify such person when the Federal inspection is proposed to be carried out and such person shall be allowed to accompany the inspector during the inspection."

This issue is closely tied in with the general question of the extent to which State programs must parallel the Federal regulations (see discussion of 30 CFR Part 732). The legislative history establishes convincingly that, at least with respect to citizen participation, a State program must parallel the Federal scheme.

With respect to the issue of citizen participation in the administration and enforcement of the Act, both the House and Senate Reports stated:

"While it is confident that the delegation of primary regulatory authority to the States will result in adequate State enforcement, the Committee is also of the belief that *a limited Federal oversight role as well as increased opportunity for citizens to participate in the enforcement program are necessary to assure that the old patterns of minimal enforcement are not repeated.*" S. Rep. 95-128, 95th Cong., 1st Sess. at 90 (1977); *see* H. Rep. 95-128, 95th Cong., 1st Sess. at 129 (1977).

This indicates that citizens' rights granted under Federal law and regulations may not be abridged by State programs.

Also, the Senate Report indicates that Congress intended that citizen involvement be provided in all areas of the regulatory process:

"The success or failure of a national coal mining regulation program will depend, to a significant extent, on the role played by citizens in the regulatory process. The State regulatory authority or Department of the Interior can employ only so many inspectors, only a limited number of inspections can be made on a regular basis and only a limited amount of information can be required in a permit or bond release application or elicited at a hearing. Moreover, a number of decisions to be made by the regulatory authority in the designation and variance processes under the Act are contingent on the outcome of land use issues which require an analysis of various local and regional considerations. While citizen participation is not and cannot be a substitute for governmental authority, *citizen involvement in all phases of the regulatory scheme will help insure that the decisions and actions of the regulatory authority are grounded upon complete and full information. In addition, providing citizen access to administrative appellate procedures and the courts is a practical and legitimate method of assuring the regulatory authority's compliance with the requirement of the Act.*" S. Rep. 95-128, *supra.*, at 59 (emphasis added).

In light of the requirement in Section 503(a)(7) that State programs contain rules and regulations consistent with Federal regulations, and considering the legislative history noted above, no State program can be approved which does not provide at least the same level of citizen participation in all phases of the State program as do the Federal statute and regulations. The Office added Section 840.15 to make this clear.

The Office believes that a state program must meet the following minimum criteria with respect to citizen participation:

(1) It must provide citizens with the right to request State inspection and to participate in the resulting inspections, at least to the degree provided in Section 521(a)(1) and 30 CFR 842.

(2) It must provide a citizen's right to informal review as established by 517(h) (1) and (2) of the Act and 30 CFR 842.14 and 841.15.

(3) It must authorize award of costs and expenses in administrative and judicial proceedings provided under Section 520 (d) and (f) and 525(e) of the Act and 43 CFR 4.

(4) It must authorize at least the same citizen access to the State administrative process for review of notices, orders, orders to show cause, and civil penalties as exists under Section 518 and 525 of the Act, 30 CFR 843.15 and 843.16, and 43 CFR 4.

(5) It must allow citizens as much access to the State courts as §§ 520 and 526 of the Act allow to Federal courts, in areas such as citizen suits, damage actions, review of enforcement proceedings, permit proceedings and bond proceedings.

PART 842—FEDERAL INSPECTIONS

STATUTORY AUTHORITY: 102, 201, 501(b), 504, 506, 517, 518, 521, and 523 of Pub. L. 95-87, 91 Stat. 448, 449, 468, 471, 474, 499, 504, 510 (30 USC 1202, 1211, 1251, 1254, 1257, 1267, 1268, 1271, 1273).

§ 842.11 Federal inspections.

One commenter stated that OSM should adopt criteria to limit the scope and nature of Federal inspections and procedures to protect the State from unjustified intrusions by Federal inspectors. The commenter suggested a procedure requiring the Federal inspector to obtain a "warrant" from the Regional Director before making an inspection and a procedure whereby a State could file a grievance to curtail disruptive intrusions into the State program.

These suggestions were rejected as unnecessary. Part 842 already sets forth the criteria for Federal inspections provided for under the Act. If a State feels that an inspection is unjustified, it should inform the Office. No special grievance procedure is necessary.

The Office also considered modifying Part 842 to indicate that the Office will develop and promulgate procedures for inspections to evaluate the administration and enforcement of approved State programs. While the Office decided that a plan for the evaluation of State administration and enforcement of State programs must be developed, there is no need for a regulation to that effect.

A number of commenters suggested that the Office should commit itself to performing a specified number of evaluative inspections per year. The Office decided against this because it is really a program and budget decision, not a regulatory decision. Moreover, the Office has not yet developed a plan for making evaluative inspections and, at this point, has no basis for determining what the proper level of evaluative inspections would be. More frequent inspections may be necessary in areas where there appear to be difficulties. The number and location of inspections to be made would be determined in developing and carrying out the plan for making evaluative inspections.

It was suggested that Federal inspectors should be authorized to issue "compliance opinions" to permittees. These opinions would give the permittee an interpretation of the regulations as applied to the permittee's operations, but would not result in a penalty. It was pointed out that there may be aspects of the regulations that leave some question as to precisely what the operator is to do. (For instance, at what intervals do perimeter markers have to be installed?) It was suggested that such a procedure would give the permittee a clear, written guidance from the inspector which would enable the permittee to know what he needed to do to comply, and would offer protection against inconsistent interpretations from different inspectors.

The suggestion was rejected, however, because it creates another layer of rulemaking and could be abused by operators who will defer compliance until the inspector shows up and then ask for a "compliance opinion." The Office will use other means to provide interpretations to operators, such as manuals, and plans to create a formal procedure by which the Office will make and communicate official interpretations of the Act and regulations.

It was suggested that when a Federal inspection is planned, the State regulatory authority should be given the opportunity to accompany the Federal inspectors on the inspection. It would be inadvisable to put such a requirement in the regulations. There could be instances where proper evaluation could not be performed without unannounced Federal inspections. Furthermore, to write such a requirement into the regulations might give a permittee/operator an unjustified basis for challenging an otherwise lawful Federal inspection. Though joint inspections may be useful in certain circumstances, they should not be required by the regulations.

It was commented that there can be no Federal enforcement in a State program unless the Office has taken over enforcement pursuant to Section 504(b) or Section 521(b) of the Act. This comment is based on an argument that, under Section 503(a), a State with an approved State program has exclusive jurisdiction to enforce. It was also suggested that Section 521 of the Act requires 10 days' prior notice to the State before initiation of any Federal enforcement action.

These comments are without merit, for they ignore critical language in Section 503(a):

"Each State * * * which wishes to assume exclusive jurisdiction over the regulation of surface coal mining and reclamation operations, *except as provided in Sections 521 and 523 * * * of this Act* * * *" (Emphasis added.)

Thus, States with approved State programs have "exclusive" jurisdiction *except* as provided in Sections 521 and 523. See discussion of the use of "primary" in lieu of "exclusive" with respect to State jurisdiction in preamble to 30 CFR 701.4.

The regulations do not exceed the statutory exception. Section 843.11(a) provides for issuance of cessation orders in cases of imminent hazard on the basis of "any Federal inspection." This authority is clearly conferred by Section 521(a)(2). Section 843.11(b) provides for issuance of a cessation order for failure to abate a notice of violation issued under 843.12(a)(1). Section 843.12(a)(1) provides for the issuance of notices of violation based on a Federal inspection carried out during the enforcement of a Federal program or Federal lands program or under Section 504(b) and 521(b). These two Sections (843.11(b) and 843.12(a)(1)) are based on Section 521(a))3) of the Act. Section 843.12(c) provides for issuance of notices of violation in certain cases of State inaction. As the discussion below of Section 843.12(c) indicates, that provision is also based on § 521 of the Act.

Section 842.11 (a) and (b) state clearly that the following types of Federal inspections may occur: inspections to evaluate State programs; to develop and enforce Federal programs and Federal lands programs; to enforce a State program not being enforced by a State, under Section 504(b) or 521(b) of the Act; to determine whether a notice or order issued during an authorized inspection has been complied with; and certain inspections based on citizen complaints. These inspections are authorized under Section 517(a) and 521 of the Act. In the permanent program, prior notification to States is required only under Section 521(a), which provides for such notice only in certain cases. This is reflected in Section 842.11(b)(1)(ii)(B).

Subsection (b) was renumbered as (b)(1), Paragraph (1) was renumbered as (i), and Paragraphs (i)–(iii) were renumbered as (A)–(C).

Section 842.11(b)(1)(ii) provides that the Office must inspect when it has notified a State of a possible violation but the State has failed to inform the Office within 10 days that appropriate action has been taken. Under this regulation, if the person supplying the information provides adequate proof that an imminent danger to the public or a significant, imminent environmental harm exists and that the State has failed to act, the 10-day notification period is waived. This is based upon Section 521(a)(1) of the Act.

One commenter pointed out an oversight in the proposed regulations, in that citizen complaints for imminent hazards as well as for violations should trigger an inspection action as provided in Section 521(a)(1) of the Act. While Section 521(a)(1) of the Act does not use the words "imminent danger" or the like until the third sentence, it seems clear that when read as a whole Section 521(a)(1) contemplates reporting imminent hazards and harms as well as violations. This is important because § 521(a)(2) and the legislative history make it clear that an imminent hazard or harm may result from a "condition or practice" as well as a violation per se. The Office has modified Sections 842.11(b) and 842.12 (a)(1) and (b)(1) to state expressly that imminent hazards will be covered.

Additional commenters suggested that Section 842.11(b)(1)(i)(C) be amended to require Federal inspectors

to consult with the State as to whether it has acted and to give the State opportunity to act, in cases of imminent danger or harm. The Office has not made this change. While the Federal inspector would naturally try to contact the State to determine whether the State had acted, to require this as a prerequisite to a Federal inspection would be contrary to Section 521(a)(1), which the regulation tracks.

A new Subsection (b)(2), transferred from 30 CFR 842.12(b), was added to define when an authorized representative has "reason to believe" a violation, condition or practice exists. This new Subsection is based on language in 30 CFR 721.13(a), but was rewritten to shorten and clarify the language.

Two commenters suggested that additional language be inserted in 842.11(b)(ii)(C) setting forth what "adequate proof" is regarding (1) a citizen's supplying information that a State regulatory authority has failed to act to remedy a violation and (2) a citizen's supplying information about an imminent hazard. The commenters felt that this phrase could be used to impose an unrealistically high standard of proof, thereby impairing the exercise of citizens' rights. The Office feels that further definition of "adequate proof" is not necessary. In many instances a signed statement will suffice. A high standard of proof should not be required. It would be tragic if another Buffalo Creek disaster occurred because an oral complaint followed by a signed statement was not accepted as "adequate proof."

It was also suggested that citizens be required to file affidavits. This is not necessary because the Act provides sanctions against persons who make false representations to the Office (Section 518(g)).

Several commenters asked that Section 842.11(d) be modified to require that Federal inspections be "coordinated" with State inspections. It is not clear what was intended by the term "coordinated." (Does this mean that the inspections must be conducted jointly? That advance notice must be given to the States?) The Office has rejected this comment because there are certain inspections that can not be carried out jointly with States (e.g., in Federal lands programs) and others that should not be required to be carried out jointly (e.g., evaluative inspections). Federal inspections will be coordinated with State inspections to the extent necessary and appropriate to carry out the provisions of the Act and the regulations.

One commenter asked that inspectors not be allowed to enter an active mine site during nonworking hours unless accompanied by a company representative. It was also suggested that the inspector, on arrival at a mine site, should wait a reasonable time for a company representative to accompany him/her on the inspection. In two related comments, the Office was asked to require the authorized representative to inquire for, find, identify himself or herself to a person in charge and give notice at the site prior to inspecting.

Generally, inspectors make an effort to locate and identify themselves to those in charge of an operation before commencing their inspection, and company representatives are encouraged to accompany the inspector. However, it is not always possible or practical to locate the person in charge. The person in charge may be absent from the permit site, or may not be immediately found.

Comment was made that for an inspector to enter a mine site without intimate knowledge of the operation is dangerous to the inspector and others. The Office feels that the commenter greatly exaggerates the risk, especially since inspectors are very familiar with mine sites in general and, through study of the operator's mine maps and other materials, with the site they are inspecting.

For the foregoing reasons, no changes in 842.11(d) were made in response to these comments.

§ 842.12 Citizens' requests for Federal inspections.

Consideration was given to requiring all citizens' complaints to be initiated in writing. However, the convenience of the public and the necessity for prompt action in the case of imminent hazards seems to justify the use of oral reports followed by signed written statements.

Requests were received by the Office to amend Section 842.12(b) of the proposed regulations to use the language in the initial regulations (30 CFR 721.13(a)) regarding when a complaint gives the Office a reasonable basis to inspect. The language of the proposed subsection 842.12(b) had not been intended to change the test for "reasonable belief," merely to shorten it. Section 842.12(b) has been rewritten using language of Section 721.13(a) of the initial regulations, but shortened and clarified, and it has been transfered to 842.11 as a new Subsection (b)(2). Subsections (c)–(f) of 842.11 were relettered (b)–(e).

Commenters requested a modification to Section 842.12 to require a citizen to sign a release from damages for any injuries before being allowed to accompany the inspector on an inspection. The Office did not make this modification. The Act gives the citizen a right to accompany the inspector on the inspection. Ordinary tort law principles can be used to determine whether, if a citizen is injured on the site during an inspection, he may hold the operator liable for such injury.

OSM has no objection to a citizen signing a release form if he wishes to do so, but there is nothing in the Act or the legislative history to require a citizen to sign a release. However, OSM will insist that the citizen follow MSHA safety requirements, and OSM's regulations require that the citizen be under the direction, control and supervision of the inspector.

A suggestion was made that citizen complaints under Section 842.12(b) should be made to the State first before they were made to the Office. In other words, a citizen would have to state, when making a complaint to OSM, that he or she had contacted the State and the State had not taken appropriate action.

If the State is responsive to citizen complaints, there should be no reason why a citizen would request a Federal inspection rather than a State inspection. Section 842.11(b)1) requires OSM to notify the State of citizen complaints and allow the State 10 days to take inspection action, except where there is an imminent danger or harm and the State has failed to take appropriate action. In any event, the Office has no authority under the Act to require a citizen to ask for a State inspection before asking for a Federal inspection.

A number of comments regarding citizens accompanying inspectors were received. Some commenters felt that if the citizen accompanied the inspector on the site, the permittee/operator should be entitled to know the identity of the citizen. The Office accepted this comment. Such a requirement would not deter citizen complaints and would strike a fair balance between the interests of citizens and those of permittees/operators.

One commenter suggested that citizen informants should be limited in their right to accompany government inspectors so as to view only the areas which were the subject of their complaint. The Office believes that such a limitation would substantially interfere with the actual inspection of the mining operation because the inspection would be delayed while the citizen informant was brought in to view a particular area and then ushered out.

Several commenters discussed whether State programs must assure a right to a citizen to accompany the State inspector on an inspection resulting from his or her complaint. This issue is discussed in the preamble to Section 731.14(g)(4) and 840.15 above.

Several commenters suggested that Section 842.12(d)(3) be amended to strike the words "if any." The words "if any" refer to the fact that a citizen does not have a right to review under

Section 842.15 unless he has an interest which is or may be adversely affected Section 517(h)(1) of the Act. Therefore, no change was made.

Section 842.12(e) has been amended to specify time limits within which the Office must give copies of materials specified in Section 842.12(d) (1) and (2) to the person alleged by the citizen to be in violation.

One commenter raised the point that the term "person inspected" is not appropriate when the Office decides not to inspect. Therefore the term "person alleged to be in violation" has been adopted.

It was suggested that the person alleged to be in violation should be provided with a copy of the request before the inspection. The Office has not accepted this suggestion. It is illegal under Section 517(c)(2) of the Act to forewarn an operator of an impending Federal inspection.

Comments were received that the regulatory authority should not be required to conduct inspections without a search warrant. This comment was not accepted for the reasons discussed in the preamble to Section 840.12 above.

One commenter suggested that Section 842.13(a)(2) should specify that an inspector may have access only to records required under Section 517(b)(1) of the Act. The commenter suggested that such a change would eliminate ambiguity as to what records might be obtained. This suggested change would, in fact, create ambiguity. The section as written specifies records "under the Act, this Chapter, the applicable program, or any permit condition." This covers all stages of regulation, including approved State programs, and specifies where to look for the required records. The suggested change only refers to a broad general recordkeeping section. Accordingly, the Office has decided to retain the language of the proposed regulation.

§ 842.14 Review of adequacy and completeness of Federal inspections.

One commenter requested that Section 842.14 be amended to require OSM to assure that adequate and complete inspections are occurring whether or not a citizen complains. As now worded, Section 842.14 does not provide for procedures to insure that adequate and complete inspections be made, except with respect to citizen complaints.

Section 517(h)(2) of the Act can be read as providing for procedures only with respect to citizen complaints regarding inadequate or incomplete inspections. In the preamble to the proposed regulations (43 FR 41794, September 18, 1978), OSM stated its belief that a management review of adequacy and completeness of inspections, regardless of complaints, would be "in keeping with the wording of 517(h)(2)" and solicited additional comments on criteria for determining what constitutes an adequate and complete inspection. No criteria were suggested.

The Office will develop and publish a plan for evaluating State administration and enforcement of State programs. Procedures for determining whether States are holding the required partial and complete inspections will be part of this plan. The Office has therefore chosen to adopt § 842.14 as proposed.

Several commenters suggested that the Regional Director be required to inform the permittee of the results of his or her review of a decision not to inspect or enforce pursuant to the citizen's complaint. The commenters have a valid point. Accordingly, the Office modified Section 842.15(b) to require the Regional Director to inform within 10 days of the Federal inspection, or within 30 days of the complaint if there is no inspection.

Another comment suggested that Section 842.14-.15 be amended to grant citizens, as a matter of course, the right to seek formal review of the decision of the Regional Director under 43 CFR 4.1280 *et seq.* The commenter pointed out that this right to formal review is particularly important where the citizen seeks review of OSM inaction under Section 517(h)(1) and of inadequate or incomplete OSM inspections under Section 517(h)(2), since there is no other formal procedural mechanism by which a citizen may review OSM's performance in these crucial areas.

While it is true that citizens will have no right to formal administrative review of the Office's refusal to issue a notice or order, a citizen can still file a citizen's suit in Federal court. Also, a formal administrative review of a notice or order is available to anyone whose interest is adversely affected. Therefore, the Office has chosen not to amend these sections as proposed.

§ 842.16 Availability of records.

This section was modified to clarify what documents should be made available to the public. Subsection (b) as proposed was deleted because this material is covered in new clause (a)(1). A new Subsection (b) was added to clarify that the State is entitled to all documents and information made available to the public under subsection (a). For the reasons discussed above with respect to Section 840.14, Subsection (a) was modified to delete the definition of "conveniently available."

PART 843—FEDERAL ENFORCEMENT

STATUTORY AUTHORITY: 102, 201, 501(b), 503, 504, 510, 517, 518, 520, 521, 523, 525, 526 and 710 of Pub. L. 95-87, 91 Stat. 448, 449, 468, 470, 471, 480, 498, 499, 504, 510, 511, and 516 (30 U.S.C. 1202, 1211, 1251, 1253, 1254, 1260, 1267, 1268, 1271, 1273, 1275, and 1291).

§ 843.5 Definitions.

This section was deleted because the only definition listed, "authorized representative of the Secretary," was unnecessary.

§ 843.11 Cessation orders.

Several commenters question whether inspectors should be allowed to issue cessation orders in the field. The Office considered modifying Section 843.11(a)(1) to permit closure only by inspector supervisors at least through June 3, 1982, or to allow a State to issue cessation orders at department level rather than inspector level, as suggested by the commenters.

The Office recognizes the importance of hiring, training, and supervising inspectors so that they have enough judgment and experience not to issue unjustified cessation orders. The Office believes, however, that this is a matter of good administrative practice and management, and should not be dealt with in regulations. Furthermore, the alternatives proposed represent restrictions on the Office's ability to issue cessation orders which go far beyond what is necessary to accomplish the objective of assuring that no unjustified cessation order will be issued. In any event, the Office feels that the Act requires issuance of cessation orders in the field, as mentioned above with respect to Section 840.12(b) and (c). Sections 521(a)(2) and (3) provide that the Secretary or his authorized representative shall "immediately" order a cessation of surface coal mining operations in the case of imminent danger to the health or safety of the public, significant imminent environmental harm, or failure to abate a violation. These provisions are inconsistent with the issuance of a cessation order at a departmental level. The issuance of a cessation order by the inspector in the field assures an immediate response to a serious problem.

The legislative history states that "if *the inspector* determines that any violation of the Act creates an imminent danger . . . *the inspector* must order a cessation of the mining operation . . ." H. Rep. 95-218, 95th Cong., 1st Sess. 129 (1977); S. Rep. 95-128, 95th Cong., 1st Sess. 90 (1977) (emphasis added). The Office feels that properly trained and supervised inspectors are fully capable of making the judgments appropriate to issue a cessation order. The Office recognizes that this authority has not heretofore been given to inspectors by some States and will work closely with these States to develop a

reasonable phase-in of the authority where necessary.

One commenter recommended that there should be a Board of Review composed of representatives of regulatory agencies, employees, operators and the public which would have authority to approve or disapprove notices and orders "recommended" by inspectors, to recommend timetables for corrective action and to determine responsibility for violations. For the reasons discussed above, the Office believes that such a system (whereby inspectors would only recommend issuance of notices or orders) is not authorized in the Act. Therefore, the Office has chosen to adopt the regulations as proposed.

One commenter questioned whether a cessation order may be issued by a Federal inspector as a result of an inspection other than one under Section 521(a)(1) of the Act. Section 521(a)(2) of the Act provides for issuing cessation orders "on the basis of any Federal inspection." Section 517(a) authorizes Federal inspections to evaluate the administration of State programs or to develop or enforce any Federal program, while Section 521(a)(1) authorizes Federal inspections based on failure of the State to take appropriate action with respect to an alleged violation.

The commenter in effect reads Section 521(a)(2) as providing that "any Federal inspection" does not mean any Federal inspection authorized under Act but only an inspection authorized under Section 521(a)(1). There is nothing in the Act or the legislative history to justify this narrow reading of Section 521(a)(2). Furthermore, to read Section 521(a)(2) as the commenter proposes would mean that the Office lacks authority to issue cessation orders during the initial regulatory period and during a Federal program. The Offices does not believe this to be a reasonable reading of the Act and has not modified Section 843.11 in response to the comment.

One commenter urged the addition of a requirement that inspections resulting in cessation orders must be conducted pursuant to the Act and Section 842.11(a). The commenter wanted to attempt to "limit the overzealous Federal inspector in his ability to disrupt a State program." Under Section 517(b), OSM has the power to conduct an inspection of any site to evaluate the administration of a State program. Disputes between the Office and a State concerning inspections which the State feels are inappropriate or disruptive should be handled by cooperative consultation between the Office and the State. An operator who is causing an imminent danger or harm should not be allowed to continue to do just because the State feels the OSM inspection was "disruptive." The Office chose not to incorporate this requested change into the regulations.

Several commenters suggested that the phrase "land, air, and water resources" (which is taken from Section 521(a)(2) of the Act) be changed in Section 843.11(a)(1)(ii) and elsewhere to read "land, air, water, or cultural resources." The Office believes that the term "land resources" may be broad enough to cover visual and cultural resources associated with land, such as archeological sites, sites of historic significance or the aesthetic values of mountain ranges. Therefore, no change was made in this section of the regulations.

Two commenters proposed that the Office require a cessation of only that portion of the operations relevant to the violation. The Office did not accept this proposal. The Act provides in Section 521(a) (2) and (3) that the inspector shall immediately order a cessation of surface coal mining and reclamation operations or the portion thereof relevant to the violation. If Congress had intended that *only* the portion "relevant to" the violation could be shut down, it would not have provided for cessation of the entire operation as an alternative. There are cases where cessation of the entire operation may be necessary or where it may result in more expeditious abatement of the condition, practice or violation involved. If such is the case, cessation of the entire operation may be entirely justified. Nevertheless, inspectors should not close down more of an operation than in their judgment is necessary under the circumstances.

The initial regulations (30 CFR 722.11(d)) provide that imminent hazards must be abated in the most expeditious manner "physically" possible. A commenter requested that this word be reinserted in Section 843.11(a)(2) to show that cost is not a consideration in determining what is "the most expeditious manner possible." By deleting the word "physically" the Office did not intend to alter the meaning of Section 843.11(a)(2) and (b)(2) from that of 30 CFR 722.11(d). As discussed more fully below, inspectors are not authorized by the Act to take cost into account when determining which affirmative obligations to require. Accordingly, the comment was accepted.

The cost of compliance with abatement requirements in cessation orders concerned several commenters. They questioned whether, in issuing a cessation order requiring abatement in "the most expeditious manner possible," the inspector should be required to consider cost and effectiveness of abatement alternatives as well as rapidity of abatement. One of the commenters stated that Section 102(f) of the Act authorizes consideration of costs. This section provides that one of the purposes of the Act is to:

> "assure that the coal supply essential to the Nation's energy requirements, and to its economic and social well-being is provided and strike a balance between protection of the environment and agricultural productivity and the Nation's need for coal as an essential source of energy."

The Office finds nothing in this Section suggesting that cost be taken into account in determining what affirmative obligations should be required for cessation orders.

However, an inspector acting reasonably would not knowingly require an operator to use a more expensive and less effective means of abatement if a less expensive and more effective method could accomplish the same regulatory result in the same time. If the operator knows of such a method, he should inform the inspector and ask him to modify his order. The inspector should modify his order if he thinks the method requested would assure that the imminent danger will be abated as promptly as possible. If the inspector thinks the method suggested by the operator, though less expensive or more effective, will take a longer time to abate the violation, he would be justified in not modifying the order. Accordingly, no changes were made.

Comments were received recommending that Section 843.11(e) be modified to require an inspector to modify or vacate all part of a cessation order once the imminent danger has been abated. Sections 521(a) (2) and (3) of the Act provide that a cessation order issued under those subsections shall remain in effect until the Secretary or his authorized representative determines that the condition, practice or violation has been abated, or until modified, vacated or terminated.

It is the policy of the Office that a regulatory authority should terminate cessation orders or modify them to permit resumption of operations as soon as reasonably possible to avoid unnecessary economic harm to an operator. While Section 521(a) (2) and (3) of the Act provides that a cessation order may be kept in force until the condition, practice or violation is abated, Section 843.11(e) of the regulations allows modification of a cessation order to permit resumption of operations when the imminent harm has been abated, even though the violation may take longer to correct. However, use of this authority may involve complex and difficult judgments. If modification of the cessation order were mandated, the permittee/operator could repeatedly call back the inspector for a reinspection each time one of the violations, conditions or practices for which the order was

issued ended, on the ground that the imminent danger had passed, even though abatement had not been completed. This would be unworkable from an administrative standpoint. Therefore, no change was made in Section 843.11(e).

It was requested that the circumstances when issuance of a cessation order would be appropriate should be enumerated. The Office made no change. The terms "imminent danger to the health and safety of the public" and "significant imminent environmental harm" have been defined in 30 CFR 701.5. The Office feels that these terms cannot usefully be further defined at this time.

§ 843.12 Notices of violation.

Section 843.12(b)(1) requires a notice of violation to "set forth with reasonable specificity . . . the nature of the violation." One commenter called for citation in the notice of violation to the section of the Act and the regulations violated. The Office agrees that a notice of violation should include a citation to the regulations, but a citation of the Act is not necessary unless the violation is contained in the Act and not in the regulations. However, it is unnecessary to modify Section 843.12(b)(1) since a notice of violation which did not specify the appropriate section would not meet the requirements of Section 843.12(b)(1).

Other comments were received on the provision in Section 843.12(d) which requires an authorized representative of the Secretary to issue a cessation order if the person to whom the notice of violation was issued fails to accomplish an interim step. The commenters believed that this requirement was too harsh. The Office believes that cessation orders for failure to meet interim steps are authorized under Section 521 of the Act and are necessary for rational enforcement of the Act. The practice provides an effective enforcement tool to produce orderly and efficient abatement of the violations underlying the cessation order. MSHA used interim steps under the Federal Coal Mine Health and Safety Act of 1969 (now the Federal Safety and Health Amendments Act of 1977) and these proved to be satisfactory. The enforcement scheme under the 1969 Act, like that in the Surface Mining Control and Reclamation Act, provides for the issuance of notices of violation which, if not complied with, ripen into cessation (closure) orders. Notices of violation must give the operator a reasonable time to abate, not to exceed 90 days. If the abatement period is long, and no effort is made by the operator to abate, the Office would, without use of interim steps, have to wait until the abatement period expired before taking action. This would frustrate Congress' intent to have rapid abatement of violations, and would expose the operator to a very large fine (mininim $750 per violation per day), for each day the violation continued after the time set for abatement, as provided in Section 518(h) of the Act. Accordingly, no change was made.

A major issue was raised with respect to the authority of the Office to issue notices of violation during the permanent program. The proposed regulation (Section 843.12(d)) provided for mere reporting of a violation to the State and the operator, rather than the issuance of a notice of violation, when a violation is found by OSM in a State with an approved State program. The only exception to this was where OSM is enforcing the State program pursuant to Section 504(b) or Section 521(b) of the Act. The preamble to the proposed regulations stated, however, that OSM was considering the alternative approach of issuing regular notices of violation, and invited comments on how to correctly interpret the Act and the legislative history.

Section 521(a)(3) of the Act lists those instances when the Secretary shall issue notices of violation. Section 521(a)(1) of the Act provides that OSM is to notify the State regulatory authority when OSM learns that there is a violation. If the State fails to take "appropriate action" within 10 days after notification, then OSM is to immediately conduct an inspection. If OSM cannot issue a notice of violation following the State regulatory authority's refusal or failure to take action in the first instance, then the Federal inspection under Section 521(a)(1) may be pointless. One answer to this statement is that the point of the Federal inspection in such a situation is to gather information for a Section 521(b) proceeding (OSM taking over all or a portion of a State program). The difficulty with this argument is that, as a practical matter, it would leave a large gap in the enforcement scheme of the Act.

The Office's ability to take over a part of a State program as a result of the State's refusal or inability to take action in isolated cases may be limited and may require a great deal of time. If this is true, then during the interim violations which are not imminent hazards could go totally unpunished and unabated. It should be pointed out that some of these notice-of-violation situations could be potentially serious or widespread, even though a hazard to life or significant environmental harm was not "imminent" at the time of the Federal inspection. There is no reason to believe that Congress intended that such a gap exist in the permanent program or that Congress intended OSM to sit idly by while these violations ripen into imminent hazards so that OSM can act under the provisions of Section 521(a)(2) of the Act. The Office concurs with a commenter that this would be a "senseless risk to the environment and public health and safety."

The legislative history of the Act does give conflicting statements on this issue. There is a fairly detailed discussion of this legislative history in a comment to this section. This discussion is contained in the comments of the Council of the Southern Mountains, Inc., page 85-97. The Office reads the legislative history, when considered in conjunction with the Act, as allowing OSM to issue notices of violation, at least in some circumstances, during a State program.

As a legal matter, issuance of notices of violation fills a void or gap in the Federal enforcement scheme—a gap between the existence of the uncorrected violation and the prerequisite showing for Section 521(b) proceedings to take over enforcement of a State program. As Judge Flannery has stated in *In re: Surface Mining Regulation Litigation*, 452 F. Supp. 327, 11 E.R.C. 2078 (D. D.C., August 24, 1978), the Secretary has the authority to fill gaps in the statutory scheme with implementing regulations which are consistent with that scheme.

An alternative suggested by the same commenter was to allow OSM to issue notices of violation during a Federal inspection but with the following provision:

(a) If the State had 10 days' notice of the violation prior to the Federal inspection, but did not take appropriate action, then the Federal notice of violation would be effective immediately; however,

(b) When a Federal inspection disclosed a violation, and the State had not had an opportunity to act, then the notice would be issued to the operator, to become effective 10 days later. A copy of the notice would go immediately to the State and the notice could be vacated if the State timely informed OSM that it had taken appropriate action. Thus, there would be onsite issuance of notices of violation in all cases.

While this alternative goes far in filling the gap which would exist in the enforcement scheme if the language in the proposed regulation were adopted, it seems rather complex and unwieldy. Practical problems might prevent such a procedure from being effective. It is unclear whether a notice of violation which does not become effective immediately is authorized by Section 521(a)(3) of the Act. Furthermore, there might be confusion on the part of the operator as

to whether the OSM notice was in effect or not.

Another alternative considered was to authorize Federal inspectors to issue notices of violation only after the State has been given an opportunity to take appropriate enforcement action. In other words, if an OSM inspector discovers a violation at a mine, he reports the violation to the operator and the State and gives the State 10 days to take appropriate action to require the operator to correct the violation. If the State takes such action, OSM does nothing further. If the State does not take the proper action, OSM may return to the mine site and issue a regular notice of violation. This alternative comes closest to filling the gap identified by the commenters. If the State had already been given an opportunity to take "appropriate action" and had failed to do so in 10 days, the OSM inspector could issue the notice on the spot without re-referring the case to the State.

The Office has incorporated this last alternative into a new Subsection (a)(2) of 843.12. The previous subsections (a) (2), (b) and (c) have been renumbered as Subsections (b), (c) and (d). The previous subsection (d) has been deleted.

§ 843.13 Suspension or revocation of permits.

As § 843.12(a)(2) and (3) were proposed, the Secretary could find that a pattern of violations exists after considering certain factors, including the number of violations of provisions relating or not relating to "the same general topic." Sections 843.12(a)(2) and (3) were modified to return to the language used in the interim regulations: "the same or related requirements" and "different requirements." Some commenters requested a more specific definition of the concept. The Office intends to issue guidance as to which sections are considered "related" or "different."

Violations of any requirements in two or more Federal inspections in any 12-month period can lead to a finding of pattern of violations, while violations of the same or related requirements in three or more Federal inspections in a 12-month period must result in a finding of pattern of violations. Several commenters observed that this standard would be unfair if a particular mine were inspected 365 times during a twelve-month period and that, therefore, some provision should be made in the regulation for taking into account the *number* of inspection days when determining whether a pattern exists.

The Office believes that such a provision would be inappropriate. It should not be a defense to a finding of pattern of violations that the operator has been inspected too often. In many cases, an operator is inspected more frequently than the average because previous inspections have resulted in notices or orders being issued, thus necessitating follow-up inspections to determine if abatement has occurred. Also, more inspections of a particular operator may occur because of frequent complaints from citizens in the vicinity. If unwarranted or willful violations are observed on these inspections, the operator should not be permitted to defend them on the ground that he was inspected too often.

The Office received a suggestion to modify § 843.13(a) to specify that the conduct of individuals who are acting contrary to company directions or policy should not be included in determining what is a pattern of unwarranted or willful violations. For the reasons discussed below with regard to § 845.13, the Office modified § 843.13(a) to provide that the actions or inactions of any person conducting surface coal mining operations on behalf of the permittee will be attributed to the permittee, excluding those actions which the permittee establishes were acts of deliberate sabotage. This would make the show-cause provisions conform with 30 CFR 845.13(b)(3)(iii) relating to imposition of civil penalties. A mere failure of the part of an individual to follow company directions or policy would not be an act of deliberate sabotage. Sabotage necessarily involves an element of intent on the part of the person committing the conduct to harm the permittee or operator or his property, such as in the case of vandalism by third parties.

Several commenters requested that the term "willful violation" in § 843.13(a) be redefined. One commenter added that if the definition put forth in the proposed regulations were allowed to stand, any violation would be a willful one, because intent of the party is not properly taken into consideration. This commenter proposed to define "willful violation" as one "willfully caused," which the Office believes does not add to the meaning of the term. However, the Office did re-evaluate its proposed definition of the term "willful" and has redefined it for clarification.

A new clause (4) was added to § 843.13(a) to clarify which violations are to be considered in determining whether or not a pattern of violations exists. For instance, notices of violation issued by a State would not be considered violations issued during a Federal inspection.

One commenter suggested deletion of the provision in § 843.13(b) allowing the Director not to issue a show-cause order if he finds that it would not further the enforcement of the Act. The commenter argued that § 521(a)(4) mandates issuance of a show-cause order upon a finding of pattern of violations.

Section 843.13(a) in effect says that the Office must consider whether a pattern of violations exists when certain events have occurred. Conceivably, this automatic provision could result in unfair issuance of a show-cause order. Therefore, a waiver provision in § 843.13(b) is needed.

However, the Office feels that the test used in the proposed regulations for determining when the waiver should be granted was unworkable and has modified the test. The new test is very stringent and will apply only in exceptional circumstances.

Several commenters requested that the Office amend § 843.13(b) to require the Office to consult with the State on whether it has acted and to give the State opportunity to act. The Office anticipates that it will consult with the State if it appears that an operator is approaching a "pattern of violations." However, the Office does not feel that it is necessary to provide in a regulation that the Office must always consult with the State as a prerequisite to the issuance of an order to show cause.

One commenter requested that § 843.13(e) be amended to require suspension or revocation of a permit upon a finding of a pattern of violations, and to require mandatory minimum suspension of three days and the imposition of preconditions to termination of suspension. The interim regulations (30 CFR 722.16(d)(2)) provide that "if the Secretary finds that a pattern of violations exists or has existed, the permit and right to mine under this Act shall be either suspended or revoked and the permittee directed to complete necessary corrective measures and reclamation operations." This provision was unintentionally omitted from the proposed regulations, and the Office has modified the regulations to restore the concept. In addition, the automatic suspension or revocation of a permit upon a finding of a pattern of violations, the mandatory minimum 3-day suspension, and the authority to impose preconditions to lifting the suspension are provided for in the procedural regulations of the Office of Hearing and Appeals relating to formal show-cause hearings (43 CFR 4.1194). The wording of § 521(a)(4) of the Act and the legislative history seem to require automatic suspension of revocation after a finding of a pattern of violations. The Office has modified § 843.13(e) to so provide.

Section 843.13(f) of the proposed regulations provided that the appropriate regulatory authority could grant attorneys' fees following an ad-

ministrative proceeding. Several commenters pointed out that authority for such an action is unclear. The Office has decided to delete this Section because it is confusing and inconsistent with the procedural hearing regulations in 43 CFR 4.1290–4.1296. The authority for such a provision is discussed in the preamble to those regulations.

Several commenters suggested that § 843.14 be modified to provide that a notice of violation or cessation order must be mailed to the person to whom it is issued, when it has been served on the person in charge of the operation. The Office does not agree with this suggestion. The permittee/operator should be able to rely on its own employees/agents to forward copies of notices and cessation orders. In some instances, OSM may want to mail notices to the permittee or operator (for instance, to inform corporate officers of violations the field personnel are not disclosing to the officers), but that should be voluntary, not mandatory.

In a related comment, it was suggested that on-site service of notices of violation or cessation orders should be required unless circumstances prevent such service. Normally notices of violation or cessation orders are served at the site. There are two exceptions to this. First, there may be no appropriate person at the site to accept service, and second, the inspector may need to return to his office to obtain technical or other assistance to determine whether a violation has occurred. In either case it would not make sense to require the inspector to travel hundreds of miles to return to the site to deliver the notice or order in person.

A notice or order cannot take effect until the permittee/operator has actual or constructive notice of it. This will mean that, especially in cessation order situations, the inspector will make every effort to find and personally serve the permittee/operator or one of his representatives or employees. Accordingly, the Office adopted § 843.14(a)(2) as proposed.

Several commenters suggested that there be a provision in the regulations that would allow the operator to designate a corporate agent for service of process, to whom all cessation orders and notices of violation could be "immediately sent." The Office has decided not to include this suggested provision. Section 843.14(c) provides for designation of an agent for service, but service on the designated agent is optional. The Office does not have to serve the designated agent if, for instance, it has served the person in charge of the operation as provided in § 843.14(a)(1). It would be a burden on inspectors in the field to require them to "immediately send" a copy of each notice or order to the designated agent. The Office believes that the operator should be able to rely on its own employees and agents to inform it promptly of the issuance of citations. If requested, the Office would usually mail copies, as a courtesy, to a central office of the permittee. But this should not be required or be made part of service.

§ 843.15 Informal public hearing.

Subsection (a) was modified to provide that the informal public hearing may be held at or near the mine site or at any other location acceptable to the person to whom the notice or order was issued. The Office will normally hold the hearing at the regional, district or field office closest to the mine site. However, if requested by the operator or any other interested person, the Office will consider holding the hearing at another location.

Subsection (a) was also modified to clarify that a notice or order which expires under this Section, like a notice or order which is terminated, is valid for the period during which it was in effect. This is to be contrasted with a notice or order which is vacated. A vacated notice or order is treated as though it never existed, whereas a notice or order that expires or is terminated counts as a violation for purposes of penalty assessment (Part 845), pattern of violations (§ 843.13) and history of previous violations (§ 845.13(b)(1)). A notice or order which is vacated is not counted for these purposes.

Subsections (c) and (d) were deleted because, though the Office believes the procedure set forth therein is entirely appropriate, the Office has decided to schedule informal public hearings in all cases except where the permittee/operator waives the hearing in writing.

Subsections (e)–(i) have been relettered as (c)–(g).

New subsection (c) was revised to delete the requirement for a five-day notice of the hearing. Because of the economic impact of cessation of mining, the Office will, if requested, hold the hearing as soon as practicable after issuance of the notice or order. This may mean a five-day notice cannot always be given.

One commenter suggested that citizens should have a right to an informal hearing, particularly where the notice of violation or cessation order relates to a condition or practice of which the citizens had formally complained. The Office believes that the proposed language should be retained and that no change is necessary. A fair reading of the Act and the legislative history indicates that informal public hearings were intended to limit the time that mining could be ceased without some form of hearing. Citizens have other effective means of communicating with the Office regarding notices of violations and cessation orders. They can request an informal meeting with the Office to discuss their concerns or may, if a citizen's complaint was filed, request review pursuant to § 842.15.

One commenter urged that informal review should be provided for notices of violation not requiring cessation of mining. The commenter said that the operator is faced with the choice of accepting the notice without any chance to explain his or her side or to go into an involved and expensive hearing procedure.

The Office has retained the proposed language. Section 843.15(a) follows the mandate of § 521(a)(5) of the Act, which only requires the Office to provide such informal public hearings for notices or orders requiring cessation of mining. Reviews for this type of notice or order are necessary due to the substantial potential economic consequences to the operator caused by cessation of operations. The Act does not contemplate imposing upon the Office the administrative burden of holding informal public hearings for every notice of violation issued. The operator is encouraged, however, to attempt to reach an informal resolution of the issue by contacting the inspector or his supervisor to discuss the operator's concerns. If persuaded that the notice was issued in error, the inspector may modify or vacate the notice of violation.

One commenter stated that the restriction upon the later use of evidence or statements made at an informal public hearing should be deleted because it would encourage a party at such an informal hearing to give dishonest testimony. It is equally probable that operators will be more honest and forthright concerning violations if they know that what they say cannot be used against them later. The principle is based on the general rule that evidence of statements made at settlement negotiations may not be introduced in subsequent court proceedings. The Office believes that the concept in proposed § 843.15(j) should be retained. Language was added to clarify that the limitation is not intended to prevent use by a party, in a later proceeding, of evidence he or she furnished in an informal hearing.

Section 843.15(j) in the proposed regulations was deleted in the final regulations, and its contents were moved to §§ 843.15(a) and 843.15(i) for an overall improvement in the organization of the section on informal public hearings.

§ 843.17 Failure to give notice and lack of information.

One commenter stated that a notice or order should be vacated if it is determined that, even though there was a violation, OSM did not have sufficient information to conduct an inspection. He believed that Federal authorities should be required to comply with their own regulations, and that if his suggestions were adopted, frivolous proceedings would be avoided or minimized.

The Office believes that the proposed language in § 843.17 should be retained. If a violation exists, the inspection cannot be said to be frivolous, and if there is no violation, there is nothing to abate. More importantly, the purpose of the procedure outlined in § 521(a)(1), upon which § 842.11(b) is based, is to define the circumstances in which the Office will defer to the State regulatory authority. It was not intended to benefit the permittee/operator. Where there is a violation, it would violate the spirit of the Act to vacate the notice or order simply because it was found that OSM did not have sufficient information under 30 CFR 842.11(b)(1)(i) and (2) to justify an inspection, particularly in situations where there is no State regulatory authority (30 CFR 842.11(b)(1)(ii)(A)) or where there is an imminent hazard or harm. The Office is charged with enforcement of the Act and may conduct inspections under § 842.11(d) on a random basis and without prior notice. Further, while § 842.11(c) requires a minimum number of inspections where OSM is the regulatory authority, it places no limitation on the maximum number, so that inspections may be conducted whether or not they are based on specific information.

The reference to administrative review proceedings was omitted because the regulation should apply in all proceedings, not just administrative proceedings.

§ 843.18 Inability to comply

Several commenters felt an order to show cause, cessation order or notice of violation should be vacated if there was a technological "inability to comply." The Office did not accept this comment. The Act and the regulations require that certain performance standards be met, and there is no reason to believe that these standards are technologically impossible to meet.

However, when an operator violates the Act or the regulations, it may be technologically impossible to undo the damage. If this is so, there may be no way to require "remedial action" or "affirmative obligations," which presuppose that it is technologically possible to ameliorate the situation. However, the fact that the damage cannot be undone is not a good reason for *vacating* the citation. As discussed above, when a citation is "vacated," it is treated as though it has never been issued and no penalty is assessed. A notice or order is "terminated" when all required remedial actions and affirmative obligations have been accomplished. If an operator has caused damage which cannot be undone and for which no remedial action or affirmative obligation can be prescribed, the citation must be terminated (not vacated). However, a penalty will be imposed in such a situation and the violation will remain in the operator's file.

One commenter suggested that there could be short-term inability to comply due to weather problems, material shortages and so forth. In such cases, the operator may request an extension of time for abatement, subject to the 90-day limit on the abatement period. *Force majeure* may provide an exception to the 90-day rule, but there is nothing in the Act or the legislative history so indicating.

A comment was made that § 843.18 should be deleted because there might be circumstances where vacating a notice or order is in the best interests of all parties. As discussed above, a notice or order can be terminated if all possible remedial actions have been taken. If a violation has occurred, there would be no justification under the Act for vacating it.

A commenter said that inability to comply should not be the basis for suspension or revocation of a permit, because there may be only one insubstantial requirement which cannot be met. As discussed above, the Office knows of no part of the Act or the regulations, whether or not "substantial", that cannot be complied with. The fear that a permit might be revoked for failure to do some insignificant but impossible thing is unfounded.

§ 843.19 Injunctive relief

Commenters questioned whether the Attorney General should be able to seek injunctive relief where an operator violates an order of an "authorized representative of the Secretary" (as opposed to an order of "the Secretary"). Section 521(c) provides that "the Secretary" may request injunctive relief. The commenters argued that permitting only the Secretary to request injunctive relief would prevent the Office from seeking injunctive relief to enforce erroneous or invalid orders issued by authorized representatives of the Secretary before the permittee could avail himself of his administrative remedies. Also, it was pointed out that 521(a) uses the word "Secretary" as well as "authorized representative of the Secretary," and that when the Act says "Secretary" this should be taken literally.

"Secretary" and "authorized representative of the Secretary" are used interchangeably in § 521 and elsewhere in the Act. To read "Secretary" literally would cause anomalous and impractical results. For example, § 521(a)(2) of the Act states that where "the *Secretary*" finds that a cessation order will not completely abate the imminent danger, "the Secretary" shall impose affirmative obligations. If this were read literally, the Secretary of the Interior would have to visit personally the minesite to make this determination, a result Congress obviously did not intend. The same anomalous result would occur if "Secretary" were read literally in 521(c) of the Act regarding injunctions. This is because, as a practical matter, the Secretary does not personally issue orders relating to enforcement.

A permittee cannot ignore any order or decision while appealing it. If the permittee wants a stay, he may apply for the stay via the temporary relief provisions in the Act (§ 525(c) and § 526(c)).

PART 845—CIVIL PENALTIES

STATUTORY AUTHORITY: Secs. 102, 201, 501(b), 517, 518, 521, 523 and 525 of Pub. L. 95-87, 91 Stat. 448, 449, 468, 498, 499, 504, 510, and 511 (30 U.S.C. 1202, 1211, 1251, 1267, 1268, 1271, 1273 and 1275).

The basis and purpose of this part are discussed generally in the preamble to the proposed regulations, 43 FR 41796-41797 (September 18, 1978).

§ 845.12 When penalty will be assessed

One commenter asked that, regardless of whether the notice of violation is assigned 30 points or less, violations caused by conduct characterized as reckless, knowing, or intentional should automatically trigger a fine. As mentioned in § 845.12, in determining whether to assess an under-31 point penalty, the Office takes into account the four statutory criteria, including negligence and good faith in compliance. As a matter of policy, the Office currently assesses discretionary penalties in cases of reckless or willful misconduct or lack of good faith in complying.

A commenter objected to the use of 30 points as the cut-off number above which penalties are mandatory for notices of violation, and requested an explanation of how the point system was devised and how the 31-point figure was arrived at. The commenter stated that the point system is "without any rational basis".

The Office believes that use of a point system is the only adequate way to achieve rational and consistent assessments. The point system was modeled after the one developed and suc-

cessfully used by MSHA. The points assigned for various categories of violations were chosen by considering what penalties would be appropriate for numerous types of hypothetical violation situations. Careful thought was given to the weight that should be given to the various criteria required to be applied in determining penalties, and how these criteria should be defined. The 31-point threshold for mandatory penalties was chosen because a violation of that magnitude was judged serious enough to warrant a mandatory penalty.

The Office plans to develop further guidance regarding the application of the point system which will greatly increase the consistency and predictability of penalty assessments. Furthermore, the Office will review the operation of the point system as applied to particular cases to determine whether further modification should be made.

A commenter noted that in the initial regulations, the preamble stated that the 30-point number would be used to determine whether a penalty would be assessed, while under the proposed regulations the determination as to whether to assess a penalty for an under-30 point violation is determined by considering the four statutory criteria—history of previous violations at the particular operation, seriousness, negligence, and demonstrated good faith in attempting to comply after notification of the violation. The initial regulations provide that in determining "whether to assess" a penalty the Office will consider the four criteria (§ 723.11(c) and §723.12(a)). This appears to require the Office to use the criteria in the point system to determine not only how many points to award, but also whether or not to assess the discretionary penalty. The preamble to the initial regulations contains two contradictory statements concerning this question. In 42 FR 62670, December 13, 1977, Paragraph 7 states flatly that a penalty will not be assesed for a violation of 27 points, while Paragraph 9 on the same page states that assessments for violations under 30 points are discretionary. Faced with this discrepancy and the plain language of the regulations, the Office has interpreted § 723.11 and § 723.12 of the initial regulations to require use of the statutory criteria in the point system to determine whether to assess a penalty, as follows: (1) the point system is used to determine whether the violation exceeds 30 points and (2) if not, the points assigned with respect to each of the four criteria are examined to determine whether to assess the discretionary penalty. For example, if a violation was assessed 29 points, including 10 points for bad faith in complying, the Office would exercise its discretion to assess. The Office feels that, as noted above, penalties should be assessed in cases of reckless, knowing, or willful violations. Therefore the Office did not adopt the suggestion that there be no penalty for any under-31 point violation.

The reference in § 845.12 (a) and (b) to "a violation contained in" a notice of violation or cessation order was deleted. In issuing notices and orders, the Office uses a form which contains, on the first page, information concerning the operator and the site and giving the identification number of the notice or order. Each violation for which a notice of violation (or order) is to be issued is described in a sheet attached to the first page. To save inspector time, the first page is not filled out separately for each violation; rather, all violations are attached to one first page. Nevertheless each violation is treated as a separate notice of violation or cessation order and the Office's forms so provide. The term "violation contained in" a notice or order referred to this manner of writing up violations. The Office deleted the term because it is not used elsewhere and could lead to confusion.

One commenter felt there was no provision or allowance for any exercise of discretion by the regulatory authority to educate the operator. This is not accurate. First, § 845 does provide a "grace period" for less serious violations in the form of discretionary assessment of penalties under 30 points. To date, for more than 35 percent of all notices of violation, the Office has assessed no penalty. Where the violation is serious (over 30 points) or intentional, or where it results in a cessation order, it should be assessed, as the regulations provide. Second, there is no need for more time to educate operators. The Act has been in effect since August 3, 1977—one year and eight months; the interim regulations have been in effect for one year and three months; and if the State program differs from the permanent program regulations, the State will have a considerable period of time to "educate" operators about the parts of the State program that differ from the permanent regulations before the State program goes into effect. Therefore, no change was made in response to this comment.

§ 845.13 Point system for penalties.

Section 845.13(b)(1) (i) and (ii) were rewritten as a new subsection (i) to shorten and clarify the regulation. The purpose of these subsections, which were based on § 723.12(b) of the interim regulations, is to give the operator a chance to exhaust his administrative and judicial remedies before having the violations counted as "previous history." The idea is that the violation shouldn't be counted as long as there is a possibility that the notice or order might be held invalid. This could occur in a § 525 hearing, a § 518 hearing or a court proceeding.

The Office has interpreted the phrase "the subject of pending administrative or judicial review" in § 723.12(b) of the initial regulations to cover violations which are the subject of a conference or for which the time to request review or a conference has not expired. The new language makes this interpretation clear. It should be noted that the exception applies only with respect to review of the notice or order, not the penalty. Thus, if a § 525 hearing has been held, and the time to appeal has expired, the violation will be counted as previous history even if a § 518 hearing has been requested.

Several commenters requested that, in determining points for the history of previous violations, violations for which the Office in its discretion has decided not to assess a penalty should not be counted. One commenter stated that § 845.13(b)(1)(iii) would force the operator to request a hearing to avoid being credited with a violation it did not commit but for which it was not assessed a penalty. Since only 1 point is assessed for a notice of violation and 5 points for a cessation order, it seems doubtful that this is a likely course of action. If the permittee/operator feels there was no violation, he can informally request the Office to vacate the NOV or CO. If the Office does not agree with him, he must decide whether or not to contest the notice or order. In any event § 518(a) requires that consideration be given to the permittee's history of previous violations at the particular operation in determining the amount of the penalty. Therefore, the requested change would be unlawful, since the violation did occur even though the penalty was not assessed.

One commenter recommended that tonnage be taken into account in the point system to allow for fairer treatment of the small operator. MSHA is required to consider production tonnage in determining penalties under the Mine Safety and Health Act. However, Congress omitted production tonnage from the criteria to be considered in the Act. Therefore, the Office believes that Congress did not wish to have different penalties for small operators.

The commenter argued that small operators produce less environmental harm. This fact, if true, will be taken into account under the "seriousness" criterion contained in § 845.13(b)(2).

Several commenters objected to attributing the actions of all persons on the minesite to the permittee or operator. They argued that industry cannot prevent employees from disregarding

company instructions. To relieve the operator of responsibility for the actions of persons working on the site, as suggested by the commenter, would prevent effective enforcement of the Act. Every operator or permittee is responsible for the actions of its employees and its contractors and can take steps to assure that they obey the law. If this comment were accepted, companies could exempt themselves from responsibility for compliance by the simple expedient of issuing a memo, never intended to be enforced, instructing its employees or instructors to obey the law.

However, as some commenters pointed out, deliberate employee sabotage can occur, and this should be considered in determining the penalty. Accordingly, the Office has modified § 845.13(b)(3)(iii) so that deliberate acts of sabotage, if proven, can be considered in calculating the points to be assigned for negligence.

One commenter asked that rapid compliance be defined to mean that the permittee/operator took extraordinary measures to abate or that abatement was achieved before the time set for abatement. The Office rejected this idea. Under the point system, up to 10 points are taken off if the operator complies rapidly. There are cases where inspectors are overly generous in setting the abatement period. In such a case the inspector is in effect "giving" the operator a penalty reduction of as much as $1,000 or more when the operator was in fact doing nothing unusal to come into compliance. Therefore, it is important to include in the definition of rapid compliance the concept that the operator must do something extraordinary to earn the reduction in penalty.

In § 845.13(b)(4), references to bad faith were deleted because, as discussed below, the mandatory $750/day minimum penalty for failure to abate is sufficient, and to give points for bad faith as well is punishing twice for the same office. Also, § 845.13(b)(4) was amended to clarify that the Office may modify an assessment where, because of the length of the abatement period, it was not possible to consider "good faith."

§ 845.14 Determination of amount of penalty.

Various comments were received concerning the size of the penalties provided for in the present system. One commenter argued that as long as it is more expensive to comply than to pay the fine, the permittee or operation will chose to pay the fine and continue to violate. This argument would have merit except that the Act provides very strong disincentives to this tactic: (1) revocation or suspension of the permit for pattern of violations; (2) cessation order for failure to abate; and (3) minimum $750/day fine for failure to abate. Also, a system that ties the civil penalty to the cost of compliance is very difficult to devise and administer and would be impractical given the volume of enforcement actions under the Act. For these reasons, the Office decided not to consider the cost of compliance in determining the civil penalty.

Many commenters asserted that the point system results in penalties that are too high, or that do not reflect the seriousness of the violations. The Office knows of no basis for this assertion. Indeed, it has been suggested to us that certain States may assess higher penalties for comparable violations. However the Office plans to evaluate the operation of the system and will modify it in the future if appropriate.

An assertion was also made that MSHA's penalties are one-quarter as high. The Office feels that the point system results in penalties which are appropriate for the violations involved. MSHA assesses penalties for different violations, and one cannot determine whether OSM's penalties are appropriate by comparing OSM's fines with MSHA's.

One commenter asserted that seriousness and good faith are not taken into consideration by the Office in assessing penalties. There is no basis for this. The commenter may be confused by the fact that the Act requires the assessment to be made within 30 days after issuance of the notice of violation or cessation order, even though the abatement period may extend beyond that time. Good faith cannot be considered until abatement has been accomplished. Where consideration of good faith is impractical because of the length of the abatement period, the regulations (§ 843.13 (b)(4)(iii) of the permanent regulations and § 723.13(e)(iii) of the intitial regulations) expressly provide for a recalculation. There have been numerous instances under the interim regulations in which an assessment has been modified to account for good faith after issuance of the assessment.

Another commenter, concerned with what he felt was the harshness of the Office's civil penalty assessment schedule, asked whether the Office could give the State Land Rehabilitation Advisory Board authority to assess penalties. It was not clear whether the commenter wanted to have the Board assess penalties under a State program or under programs enforced by OSM. If the latter, the comment cannot be accepted because the Act requires penalty assessment by the Secretary and it would not be lawful to delegate this authority to a State agency or to the Board suggested by the commenter without statutory authorization. The Office might be able to set up a committee to give nonbinding advice concerning penalties but has no present intention to do so.

With regard to a State program, the comment is, in effect, a premature request for a ruling on whether a certain arrangement will be approved as part of a State program. The Office prefers to consider such a question in connection with a review of the entire State submission.

Accordingly, the Office decided not to make any of the changes suggested by the commenters.

§ 845.15 Assessment of separate violations for each day.

Subsection (c) as proposed was transferred to subsection (a). Several commenters wanted the Office to omit this subsection, which provides that a minimum of two days be assessed for any 70-point violation existing for two days or longer. The commenters felt that this requirement was unjustified, arbitrary and excessive.

The Office believes, however, that this subsection should be retained as proposed. Section 518 of the Act provides that a daily penalty may be assessed for any continuing violation. This regulation is an exercise of that discretion. It is designed to ensure that major violations will incur stiffer penalties. A 70-point violation is extremely serious.

In another comment on the same subsection, a commenter felt that the history of previous violations should not be considered in connection with violations of greater than 70 points that continue for more than two days. The commenter felt that the daily assessment should be related solely to the particular violation and that it would be unfair to consider the record of the violator.

The Office has decided to retain the language as proposed. If the history points were not included, the 70-point cut-off would be rendered meaningless, since the total of all other possible points is less than 70. History points are based on recent conduct at the same surface coal mining operation, and indicate that the permittee/operator is aware of the Act, regulations and enforcement provisions. The permittee/operator who repeatedly operates in an unlawful manner obviously needs more prodding, hence the stiffer penalty. The 70-point threshold was established specifically so that history would be a contributing factor. Because the history of previous violations is such a valuable indicator, it would not make sense to eliminate it and to drop the cut-off to a lower point. Also § 518(a) of the Act requires history to be taken into account in de-

termining the amount of the penalty, which probably means it must be taken into account in § 845.15(c).

Sections 845.15(b)(1) and (2) were amended to clarify and simplify the language concerning the mandatory day-by-day penalty pursuant to § 518(h), where the obligation to abate has been suspended by the Office of Hearings and Appeals or a court pursuant to § 525(c) or § 526(c) of the Act.

Two commenters requested that § 845.15(b) be modified back to the concept of the initial regulations: that the daily penalty for failure to abate be the *amount assessed* or $750, whichever is greater. The Office decided to retain § 845.15(b) as proposed, which returns to the statutory language. Section 518(h) of the Act provides that the operator shall be assessed a civil penalty "of not less than $750" for each day during which the failure to abate continues. This provides additional flexibility which the Office feels is valuable to prevent unjustifiably high penalties.

A new subsection (c) was added to clarify the manner in which both the mandatory $750/day penalty for failure to abate and the discretionary penalty for continuing violations will be assessed, and to provide for reassessment to take account of good faith compliance or other facts not available at the time the initial assessment was made. As in the case of good faith points, the mandatory $750/day penalty and the discretionary penalty for continuing violations cannot properly be finally assessed until after the violation is abated. The new subsection (c) provides for authority for reassessment.

§ 845.16 Waiver of use of formula to determine civil penalties.

One commenter requested clarification regarding to whom a request for a waiver should be made and under what circumstances. The Office believes that no clarification is necessary. The request must be made to the Director, and anyone may make it. The commenter pointed out that the ten-day limit is needlessly short. The Office agrees and has extended the time limit to fifteen days.

In a related comment, it was suggested that there be specific regulations explaining when the Director could waive the point system. The Office decided not to try to set more specific criteria for when the formula could be waived. While the point system generally works very well, under the initial program the Office has found that it can generate penalties that are too high or low under certain circumstances. It is impossible to foretell what situations these might be. Therefore, a waiver clause is needed, and there should be a criterion for a waiver to prevent unfair and inconsistent waivers. An unrestricted waiver is undesirable because it undercuts the entire point system approach and leaves the Office and the administrative law judges without guidance in assessing penalties.

The standard for waiver proposed in § 845.16(a) was the same as that contained in the initial regulations. The Office has found that this standard is unworkable in practice and has replaced it with a more useful standard. Under the new standard, the point system will be waived only where, taking into account exceptional factors present in the particular case, the penalty is demonstrably unjust. The Office expects waivers to be rarely granted under this standard.

One commenter requested that the Office delete the requirement in § 845.16(a) that prevents the Director from waiving the use of the formula to reduce the proposed assessment on the basis that the penalty could be used to abate the violations. The commenter suggested that this proposed sentence does not promote the purposes of the Act in that it is punitive and diverts capital otherwise available for abatement.

Congress established penalties as a tool with which to achieve the purposes of the Act. It authorized penalties in addition to an abatement requirement, as an incentive for surface coal mining operations to achieve and maintain compliance. The Office believes the clause in § 845.16(a) is appropriate and did not accept the comment.

In another related comment, a commenter asked whether the Director is bound to consider the statutory criteria of § 518(a) of the Act even though he has elected to waive the use of the formula set forth in § 845.13. The commenter noted that § 518(a) of the Act requires that "consideration shall be given" to certain specific factors in determining the amount of the penalty assessment. The commenter believed that the statutory directive requires the Director to consider those factors despite his election to waive the use of the formula, and he urged that § 845.16 be modified to make this clear. The Office agrees with this comment and has modified § 845.16(b) accordingly.

§ 845.17 Procedures for assessment of civil penalties.

A new subsection (c) was added to clarify how modifications of assessments should be served.

§ 845.18 Procedures for assessment conference.

The entire § 845.18 was reorganized and renumbered. Subsection (a) was modified to clarify that a conference can be held for a modification of an assessment (except a modification resulting from a conference). The last sentence of subsection (a) as proposed was deleted as redundant.

A suggestion was made that assessment conferences not be open to "any person" who wished to attend, as § 845.18(b)(4) provides. This comment was rejected because it would limit the right of citizens to participate in the conference. The Office is obligated under § 102(i) of the Act to assure that "appropriate procedures are provided for the public participation in . . . enforcement of the regulations."

The renumbered subsection (b)(4) was modified to provide that the approval of the Director or his designee is needed if the proposed penalty is raised, not only if it is lowered.

The renumbered subsection (d) provides that if a settlement agreement is signed, but then payment is not received, it may be rescinded by the Office, in which case the conference officer may proceed as if there had been no settlement and determine whether the penalty should be recalculated. This was a change from the proposed draft, which provided that the originally proposed penalty would be reinstated after rescission of a settlement agreement. The Office feels that it would be unfair to impose that penalty automatically if the Office believes it is actually too high or too low.

A new subsection (f) was added to provide that evidence of statements made or evidence produced at a conference shall not be introduced as evidence or to impeach a witness at a later formal review proceeding. The basis for this type of provision is discussed above with respect to 30 CFR 843.15 (informal public hearing).

§ 845.19 Request for a hearing.

Several commenters questioned whether appeal of the penalty assessment and payment of the penalty into escrow should be required before termination of the assessment conference. The proposed regulations required payment of the proposed penalty into escrow within thirty days after the proposed assessment was issued; if a conference was scheduled, the penalty hearing would be deferred pending completion of the conference. This was a modification from the initial program, which provides that the appeal and payment into escrow must occur within fifteen days after completion of the conference. The change was made to conform with the apparent requirements of § 518(c) of the Act, which states that the assessment must be made within thirty days of the date of issuance of the notice of violation or cessative order, and that the penalty must be appealed and paid

into escrow within thirty days after the assessment,

Based on our experience with assessments, we now believe § 845.19 as proposed would cause hardship in a large number of cases. This is principally because many assessments are issued before the end of the abatement period (which may be as long as ninety days) and therefore must be proposed without considering the good faith criterion required to be considered under § 518(a) of the Act.

The conference procedure insures the Office of correct assessments by taking into account good faith and any other relevant information. This prevents the underpayment or overpayment of the penalty into escrow, and provides a much greater measure of due process to the operator, who is assured of an opportunity to be heard and to obtain a correction of the penalty before having to put his money into escrow.

Further, the proposed § 845.18 and § 845.19 would have caused considerable administrative waste and inconvenience by forcing operators to request hearings even though a conference might resolve the dispute. Therefore, to assure that the conference procedure will be held after the abatement date and that the operator will be given an opportunity to tell his story and secure a correction of the penalty before paying it into escrow, § 845.18 and .19 have been modified. They now provide that the conference shall be completed within sixty days after the abatement date, that the conference officer has thirty days to decide the issue, and that the appeal and payment into escrow must be made thirty days after completion of the conference.

SUBCHAPTER M—TRAINING PROGRAMS FOR BLASTERS AND MEMBERS OF BLASTING CREW: CERTIFICATION PROGRAMS FOR BLASTERS

The Office has determined that the proposed regulations in subchapter M should be substantially changed for the following reasons:

(1) to make affected portions consistent with the Uniform Guidelines for Employee Selection Procedures, 43 FR, 38290 (August 25, 1978);

(2) to provide an appeals system for decisions on suspension and revocation of certifications consistent with 43 CFR Part 4, and Section 526(a) of the Act;

(3) to limit office requirements for training, examination, and certification so that only those requirements necessary to implement the Act are imposed; and

(4) to eliminate duplication of effort and to apportion more appropriately responsibility in developing and administering training and certification programs for persons engaging in or directly responsible for blasting or use of explosives in surface coal mining operations.

Some of these changes are the result of public comment; others are not. Thus, in light of the substantive changes to this Subchapter, and in keeping with the spirit of Executive Order 12044 (March 23, 1978) to provide for receipt and consideration of public comment in promulgating final regulations, the Office has decided to publish a revised text of the entire Subchapter M as proposed regulations and to request public comment. States will be allowed six months after publication of final regulations for Subchapter M to submit programs for training, examining and certifying blasters.

Regulation Drafters

The permanent program regulations have been drafted by a large professional staff in the Office of Surface Mining and on detail from other Federal agencies. Preparation of the regulations has been under the responsibility of Walter Heine, Director, Office of Surface Mining. Paul Reeves, Deputy Director, supervised the staff which drafted the regulations. OSM Assistant Directors have been responsible for the preparation and content of the following individual Subchapters:

—David R. Maneval, Assistant Director, Technical Services and Research—Subchapters G, J, and K

—Carl Close, Assistant Director, State and Federal Programs—Subchapters C, D, and F

—Richard Hall, Assistant Director, Inspection and Enforcement—Subchapters A and L

Date: March 5, 1979.

James A. Joseph,
Acting Secretary
of the Interior.

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